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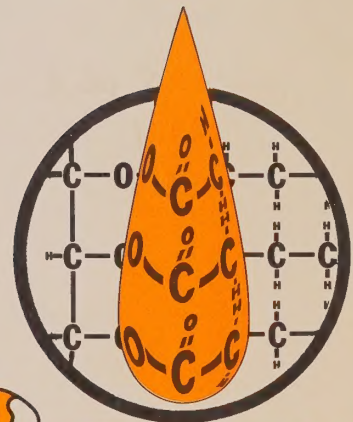








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ANNUAL REVIEW 1977





DEPARTMENT OF INDUSTRY, TRADE AND COMMERCE

FATS AND OILS IN CANADA

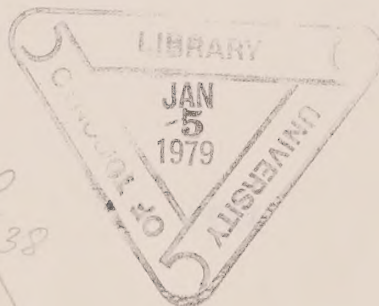
ANNUAL REVIEW

1977

Prepared by:

Grain Marketing Office  
Department of Industry, Trade and Commerce  
Ottawa, Ontario  
Canada K1A 0H5

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## INTRODUCTION

"Fats and Oils in Canada - Annual Review 1977" represents the fifth annual issue of this publication.

The feature article this year deals with the POS Pilot Plant facility in Saskatoon, and the important role of this new facility in developing innovative products and processes in the field of oils, protein and starch.

A number of sources were used in developing the statistical tables contained in this publication. While Statistics Canada was the principal source, others included the United States Department of Agriculture and Oil World.

This publication is intended to serve as an information source on Canadian and global oilseed, oil and meal production and trade. Suggestions and comments are welcome and should be addressed to:

Grain Marketing Office (40A)  
Department of Industry, Trade  
and Commerce  
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CHAPTER 1POS PILOT PLANT FACILITY IN SASKATOON  
SERVING WIDE RANGE OF CLIENTS/MEMBERS

Born of the challenge to fill a technological gap identified for the federal government's Grains Group in 1972 and the opportunity for innovative industry development through a unique structure embracing a wide spectrum of interests, the POS Pilot Plant in Saskatoon now provides the potential to help Canada maintain her place in the forefront of grain and oilseed component extraction and processing.

Because of the unique structure of the corporation which operates the pilot plant facility--unique in that industry was given control of the board of directors although the federal government guaranteed 90 per cent of capital costs and is contributing substantially to initial operating deficits--most of the responsibility for the continued success of the venture now devolves upon the industry itself.

The monogram "POS" derives from the initials of the primary components with which science and technology in this field are concerned: Protein, Oil and Starch.

As the result of careful planning, the plant offers clients exceptional versatility and sufficient size for the scale-up of bench processes for economic and technical feasibility analysis. It has an extensive processing capability in its primary, secondary and flammable processing sections. Laboratory support is provided by both physical facilities and a scientific staff available to clients who choose not to provide their own analysts on project work. Separate laboratories are equipped for client staffing. Further support is provided through a reference library connected to a cooperative inter-library system, a machine shop for maintenance and equipment modification and an in-house design assistance capability. Members enjoy priority but non-members are welcome to use these facilities as available.

Even taking account of today's inflated currency, the pilot plant represents a large investment. Of the total capital cost of nearly \$5 million--largely spent on building and equipment, since land rent is only nominal thanks to the University of Saskatoon on whose campus it is located--the federal government contributed \$4.5 million. The provinces of Alberta and Saskatchewan each invested \$100 thousand, 20 private firms, the Rapeseed Association of Canada and the University of Saskatoon \$10 thousand each.

To ensure initial financial viability of the proprietary corporation, set up to operate the facility--POS Pilot Plant Corporation, a federally-registered, "not for profit" corporation--members also subscribed working capital. The Department of Industry, Trade and Commerce guaranteed to finance operating deficits in the first five years up to a maximum of \$3 million. Other members contracted to supply operating funds over a five-year period as follows. Provinces, \$50 thousand per annum; firms, universities and associations \$5 thousand per annum.

Behind these obvious and quantifiable costs lie a dedicated and vital contribution of immeasurable quantities of inspiration, toil and time by, literally, dozens of people.

All of which raises the questions: "Was the project justified?" and "Who are the benefactors?"

As events have unfolded, there is no question that the need is real and the concept appropriate. In the plant protein area, for example, the original projections on which the project was based six years ago have been substantiated by time. This is no surprise. For in spite of aberrations in supply and price and economic conditions which may temporarily suppress effective demand for edible (processed) plant protein foods--low beef prices in the last few years have had such an effect--the need for protein in the world's diet continues its inexorable growth.

Looking to 1980, the report (Food Protein from Grains and Oilseeds) commissioned by the Honourable Otto Lang, Minister Responsible for the Canadian Wheat Board said:

"Between 1970 and 1980 the gap in per capita income and consumer purchasing power will widen between developed countries and developing countries, due largely to the higher rate of population increase in the latter countries. Consumers in developed countries will experience increasing financial ability to diversify diets with a broad range of more highly processed food products, while most consumers in developing countries will continue to be limited to the purchase of lower cost food items incorporating a lower level of processing.

Demand for protein differs from protein requirements. The world population prefers to consume on average much more protein than is required to perform normal body functions.

For the high income countries both energy demand and total protein demand are projected to increase slightly. Demand for animal protein will increase proportionately more than total protein demand, and there will be a small absolute decline in daily per capita demand for plant protein. Fat intake will increase moderately with increased demand for animal products.

Average daily per capita demand for both energy and protein will increase more in developing countries than in developed countries. Demand for animal protein in developing countries will increase more rapidly than total protein demand but there will still be a noticeable increase in per capita demand for plant protein. Fat intake will increase also."

When the coefficients of growth rates are applied to these per capita trends, the total demand line sweeps sharply upward. Within the overall projection of a 23 per cent increase in world population in the decade 1970 to 1980, the compound growth rate is highest in the same economic classes whose individuals demand ever increasing quantities of plant protein.

While these optimistic forecasts remain basically sound, actual developments have proved to be even more encouraging to the plant protein producers. In North America, where an organized industry first started up, recent expansion and diversification in the plant protein product market have been described as an "explosion". Likewise, Britain and the rest of the EEC have made giant strides since the early 1970's towards coming to grips with the great potential for "grafting of new protein foods onto our diet". Vegetable protein associations were formed in Japan and Britain some time ago. Action has begun to found and structure an EEC association. Individual associations already are active in continental European countries and (soy) plant protein production and processing is growing dramatically. Amsterdam now has the largest crushing, extraction and milling plant in the world. Extruders are at work in Denmark, Holland and Britain. A very large isolate plant is scheduled to come on stream this year and at least two countries are producing spun protein analogs. The industry's proponents in Europe have expressed confidence that the way has been paved for acceptance of the necessary legislation and regulations to permit plant protein to take its rightful place in the human diet.

Because of the world's great preoccupation with protein as a basic necessity for human progress and, perhaps, survival, developments in this area have been getting the lion's share of attention. This does not mean that the other ingredients with which PDS is concerned--oil and starch--have been languishing in a backwater. The requirements for more and better vegetable oils are virtually universal. Cereal-based starch, which mainly finds an industrial market in Canada, still appears to have an excellent potential as a substrate for sweeteners and other "chemical" derivatives.

As costs and competition increase, the need for improved refining methods for vegetable oils assumes greater significance. POS offers the opportunity to monitor, under strict parameters, oil refining capabilities which to date have only been possible to most crushers and refiners on a commercial and less controllable scale.

Ongoing POS capability will provide opportunities for improved methods of hydrogenation of oils and fats.

POS further offers the opportunity for changes in crushing procedures with the increased potential of improving oils and meals for further processing.

In the broadest sense, the whole world benefits from projects like POS, which serves as one of the keys to unlock a great storehouse of new and better food and industrial products from renewable grain and oilseed resources.

In a business, or commercial, sense--and the production, processing and marketing of Canadian grain and oilseeds is a business proposition--the first-line benefactors are the various segments of the industry. Because POS offers a mix of capabilities which do not exist at any other single location, firms which deal in the development of new products, technology and equipment can use the pilot plant to extend their own capabilities to meet any competition and at reasonable cost.

At the farm, or producer, level, not only can work done in POS lead to new and, hopefully, more lucrative raw materials markets but the scope for new crops is greatly enhanced. The promise shown for peas and sunflowers is only an inkling of what the future may bring.

World attention is focused as never before on the degree of excellence which nations have assembled or have failed to assemble, to meet the advent of a brand new era in food science and technology. Thousands of experts are expected to attend the 1978 protein conference in Amsterdam, for example. Canadians can be pleased that the community of effort which created POS has ensured that they need feel second to none in this kind of auspicious company.



## CHAPTER 2

### WORLD PRODUCTION AND TRADE IN FATS AND OILS

#### World Fats and Oils: Calculated Production

World production of fats and oils in 1978 is forecast at 53.4 million metric tons, which is 6.5 million tons above the 1977 production (Table 1).

The increase forecast for 1978 is sharply higher than the long-term trend, mainly reflecting larger supplies of soybean, sunflowerseed and palm oils.

In 1977, production of edible vegetable oils, marine oils and industrial oils declined from 1976 levels, but for 1978, production is forecast to recover to the long-term trend line for these products.

Animal fat production will be only slightly increased in 1978. Marine oil production is projected to remain unchanged from the 1977 level.

#### World Production of Major Oilseed Meals

The meal production figures for 1977 are estimates only, while the 1978 figures are projections. The 1978 figure of 80,986 thousand tons (Table 2) is a 17 per cent increase over the 1977 level, and is due mainly to the anticipated increase in soybean meal production.

Sunflower meal, linseed meal and rapeseed meal production are all forecast to increase in 1978. Fish meal production is expected to show only a marginal increase, to slightly over 4 million metric tons.

#### World Net Exports of Oilseeds, Oils and Fats

In 1977/78, total world supplies of the major oils and fats are estimated to increase by 3 per cent over the previous year, mainly due to projected increases in the production of soybean, cottonseed, sunflowerseed and palm oils.

In the food oil sector, ending stocks will increase by 8 per cent to 5.7 million tons.

In the non-food sector, 1977/78 ending stocks will be slightly increased from 1976/77, at 800,000 metric tons.

TABLE 1  
WORLD OIL AND FAT: CALCULATED PRODUCTION <sup>1/</sup>  
(Thousands of Metric Tons)

<u>EDIBLE VEGETABLE OILS</u>	<u>1974</u>	<u>1975</u>	<u>Estimated 1976</u>	<u>Estimated 1977</u>	<u>Forecast 1978</u>
Cottonseed	3,168	3,260	2,766	2,983	3,298
Peanut	3,133	3,166	3,647	3,278	3,336
Soybean	9,382	8,318	10,164	9,053	11,250
Sunflower	4,518	3,989	3,605	3,692	4,572
Rapeseed	2,415	2,679	2,879	2,323	2,908
Sesame	634	622	645	626	694
Safflower	210	215	322	209	275
Olive <sup>2/</sup>	1,527	1,420	1,752	1,462	1,636
Corn	311	297	412	425	440
<b>TOTAL</b>	<b>25,298</b>	<b>23,966</b>	<b>26,192</b>	<b>24,051</b>	<b>28,409</b>
<u>PALM OILS</u>					
Coconut <sup>3/</sup>	2,227	2,890	3,309	3,132	3,188
Palm Kernel	497	516	524	574	602
Palm	2,654	2,976	3,135	3,456	3,740
Babassu	105	105	125	90	95
<b>TOTAL</b>	<b>5,483</b>	<b>6,487</b>	<b>7,093</b>	<b>7,252</b>	<b>7,625</b>
<u>INDUSTRIAL OILS</u>					
Linseed	755	744	782	680	916
Castor	496	342	300	333	375
Oiticica	11	11	15	14	14
Tung	114	91	109	96	110
Olive Residue <sup>4/</sup>	146	128	158	147	160
<b>TOTAL</b>	<b>1,522</b>	<b>1,316</b>	<b>1,364</b>	<b>1,270</b>	<b>1,575</b>
<u>ANIMAL FATS</u>					
Butter (Fat Content)	4,496	4,563	4,674	4,757	4,830
Lard	4,534	4,432	4,240	4,425	4,700
Tallow, Grease	4,955	4,599	4,806	5,100	5,175
<b>TOTAL</b>	<b>13,985</b>	<b>13,594</b>	<b>13,720</b>	<b>14,282</b>	<b>14,705</b>

TABLE 1 (Cont'd)

<u>MARINE OILS</u>	<u>1974</u>	<u>1975</u>	<u>Estimated 1976</u>	<u>Estimated 1977</u>	<u>Forecast 1978</u>
Whale	40	45	45	40	40
Sperm Whale	120	119	119	110	110
Fish (Including Liver)	1,001	1,003	969	930	930
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
TOTAL	1,161	1,167	1,133	1,080	1,080
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
GRAND TOTAL	47,440	46,530	49,502	47,935	54,394
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

1/ Years indicated are those in which most of given oil was produced.  
Includes oil equivalent of seed production.

2/ Excludes olive residue oil.

3/ Estimated on basis of exports and other information.

4/ Includes quantities of refined oil for edible purposes.

SOURCE: United States Department of Agriculture, FOP 25-77.

Table 2

World Production of Major Oilseed Meals <sup>1/</sup>

(Thousands of Metric Tons)

<u>OILSEED MEALS</u> <sup>2/</sup>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u> <sup>3/</sup>	<u>1978</u> <sup>4/</sup>
Soybean Meal	42,139	37,361	45,654	40,702	49,753
Cottonseed Meal	9,082	9,362	7,963	8,565	9,582
Peanut Meal	3,759	3,800	4,447	4,099	4,213
Sunflower Meal	4,286	3,769	3,510	3,552	4,337
Rapeseed Meal	3,736	4,118	4,431	3,683	4,306
Copra Meal	1,218	1,583	1,828	1,716	1,686
Sesame	657	644	664	673	700
Palm Kernel Meal	539	559	568	623	653
Linseed Meal	1,398	1,333	1,471	1,439	1,721
TOTAL	66,814	62,529	40,536	65,052	76,951
Fish Meal & Solubles	4,205	4,062	4,508	3,940	4,035
WORLD TOTAL	71,019	66,591	75,044	68,992	80,986

<sup>1/</sup> Expressed on a soybean meal equivalent basis.<sup>2/</sup> Calculated from assumed crushings and extraction rates applied to that portion of each crop available for crushing and/or export and not actual crushings.<sup>3/</sup> Estimated<sup>4/</sup> ProjectionSOURCE: United States Department of Agriculture, FOP 18/77.



Table 3

MAJOR OILS & FATS: WORLD PRODUCTION, DISAPPEARANCE, AND STOCKS<sup>1/</sup>

(Thousands of Metric Tons)

Primarily for Food:

<u>Soybean Oil</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977</u>
Opening Stocks <sup>3/</sup>	545	815	833	1,200	
Production <sup>4/</sup>	8,819	8,269	10,214	9,967	10,
Disappearance <sup>3/</sup>	8,549	8,251	9,847	10,207	10,
Ending Stocks <sup>3/</sup>	815	833	1,200	960	1,
<u>Cottonseed Oil</u>					
Opening Stocks <sup>3/</sup>	190	210	235	205	
Production <sup>4/</sup>	2,948	2,928	2,486	2,697	2,
Disappearance <sup>3/</sup>	2,928	2,903	2,516	2,702	2,
Ending Stocks <sup>3/</sup>	210	235	205	200	
<u>Groundnut Oil</u>					
Opening Stocks <sup>3/</sup>	308	290	305	440	
Production <sup>4/</sup>	2,537	2,601	3,232	2,786	2,
Disappearance <sup>3/</sup>	2,555	2,586	3,097	2,816	2,
Ending Stocks <sup>3/</sup>	290	305	440	410	
<u>Sunflower Oil</u>					
Opening Stocks <sup>3/</sup>	255	500	780	430	
Production <sup>4/</sup>	4,161	3,908	3,394	3,404	4,
Disappearance <sup>3/</sup>	3,916	3,628	3,744	3,534	4,
Ending Stocks <sup>3/</sup>	500	780	430	300	
<u>Rapeseed Oil</u>					
Opening Stocks <sup>3/</sup>	215	205	225	240	
Production <sup>4/</sup>	2,440	2,442	2,612	2,792	2,
Disappearance <sup>3/</sup>	2,450	2,422	2,597	2,772	2,
Ending Stocks <sup>3/</sup>	205	225	240	260	
<u>Sesame Oil</u>					
Opening Stocks <sup>3/</sup>	45	47	44	45	
Production <sup>4/</sup>	669	651	610	636	
Disappearance <sup>3/</sup>	667	654	609	636	
Ending Stocks <sup>3/</sup>	47	44	45	45	
<u>Olive Oil<sup>5/</sup></u>					
Opening Stocks <sup>3/</sup>	306	328	460	743	
Production <sup>4/</sup>	1,566	1,553	1,725	1,442	1,
Disappearance <sup>3/</sup>	1,544	1,421	1,442	1,481	1,
Ending Stocks <sup>3/</sup>	328	460	743	704	
<u>Coconut Oil</u>					
Opening Stocks <sup>3/</sup>	300	250	323	360	
Production <sup>4/</sup>	2,068	2,486	3,096	2,796	2,
Disappearance <sup>3/</sup>	2,118	2,413	3,059	2,846	2,
Ending Stocks <sup>3/</sup>	250	323	360	310	

<u>Palm Kernel Oil</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
Opening Stocks <sup>3/</sup>	58	65	70	75	80
Production <sup>4/</sup>	439	480	518	555	600
Disappearance <sup>3/</sup>	432	475	513	550	600
Ending Stocks <sup>3/</sup>	65	70	75	80	80

<u>Palm Oil</u>					
Opening Stocks <sup>3/</sup>	207	256	333	340	390
Production <sup>4/</sup>	2,057	2,434	2,647	2,910	3,170
Disappearance <sup>3/</sup>	2,008	2,357	2,640	2,860	3,100
Ending Stocks <sup>3/</sup>	256	333	340	390	460

<u>Butter, Fat Content</u>					
Opening Stocks <sup>3/</sup>	876	887	869	992	1,084
Production <sup>4/</sup>	5,223	5,242	5,434	5,600	5,550
Disappearance <sup>3/</sup>	5,212	5,260	5,311	5,508	5,634
Ending Stocks <sup>3/</sup>	887	869	992	1,084	1,000

<u>Lard</u>					
Opening Stocks <sup>3/</sup>	247	243	260	245	260
Production <sup>4/</sup>	3,987	4,037	3,696	3,843	4,000
Disappearance <sup>3/</sup>	3,991	4,020	3,711	3,828	3,990
Ending Stocks <sup>3/</sup>	243	260	245	260	270

<u>Fish Oil</u>					
Opening Stocks <sup>3/</sup>	324	289	352	323	250
Production <sup>4/</sup>	910	1,049	984	887	850
Disappearance <sup>3/</sup>	945	986	1,013	960	840
Ending Stocks <sup>3/</sup>	289	352	323	250	260

<u>Food Oil &amp; Fats, Total</u>					
Opening Stocks <sup>3/</sup>	3,876	4,385	5,089	5,638	5,253
Production	37,824	38,080	40,648	40,315	42,370
Total Supplies	41,700	42,465	45,737	45,953	47,623
Disappearance <sup>3/</sup>	37,315	37,376	40,099	40,700	41,952
Ending Stocks <sup>3/</sup>	4,385	5,089	5,638	5,253	5,671

Primarily for Non-Food:

<u>Linseed Oil</u>					
Opening Stocks <sup>3/</sup>	165	115	130	147	170
Production <sup>4/</sup>	678	602	642	664	720
Disappearance <sup>3/</sup>	728	587	625	641	670
Ending Stocks <sup>3/</sup>	115	130	147	170	220

<u>Castor Oil</u>					
Opening Stocks <sup>3/</sup>	67	110	150	119	90
Production <sup>4/</sup>	399	376	314	314	320
Disappearance <sup>3/</sup>	356	336	345	343	330
Ending Stocks <sup>3/</sup>	110	150	119	90	80

<u>Tung Oil</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
Opening Stocks- <sup>3/</sup>	45	29	30	18	1
Production	97	107	105	104	10
Disappearance- <sup>4/</sup>	113	106	117	104	9
Ending Stocks- <sup>3/</sup>	29	30	18	18	2
<u>Tallow &amp; Greases</u>					
Opening Stocks- <sup>3/</sup>	390	490	436	454	48
Production	5,343	5,184	5,499	5,710	5,65
Disappearance- <sup>4/</sup>	5,243	5,238	5,481	5,684	5,65
Ending Stocks- <sup>3/</sup>	490	436	454	480	48
<u>GRAND TOTAL</u>					
Opening Stocks- <sup>3/</sup>	4,543	5,129	5,835	6,376	6,01
Production	44,341	44,349	47,208	47,107	49,16
Total Supplies- <sup>4/</sup>	48,884	49,478	53,043	53,483	55,17
Disappearance- <sup>3/</sup>	43,755	43,643	46,667	47,472	48,70
Ending Stocks- <sup>3/</sup>	5,129	5,835	6,376	6,011	6,47

1/ October-September

2/ Preliminary

3/ Estimated

4/ Residual of the balance.

5/ Seasons November/October 1973/74 to 1977/78. Includes also edible and inedible residue oils.

SOURCE: "Oil World", Hamburg, November 11, 1977.

TABLE 4

WORLD PRODUCTION OF OILMEALS<sup>1/</sup>  
(Thousands of Metric Tons)

	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u> <sup>2/</sup>	<u>1976/77</u> <sup>3/</sup>
Soybean Meal	33,025	38,749	36,729	44,492	43,395
Cottonseed Meal	9,673	9,743	9,676	8,256	8,871
Groundnut Meal	3,472	3,540	3,602	4,487	3,850
Sunflower Meal	4,018	4,762	4,452	3,970	3,998
Rapeseed Meal	3,992	3,899	3,895	4,142	4,407
Sesame Meal	771	795	766	720	755
Copra Meal	1,476	1,216	1,459	1,808	1,644
Palm Kernel Meal	480	512	566	607	655
TOTAL	<u>56,907</u>	<u>63,216</u>	<u>61,145</u>	<u>68,482</u>	<u>67,575</u>
Linseed Meal	1,493	1,303	1,166	1,223	1,269
Fishmeal & Solubles	<u>3,831</u>	<u>4,014</u>	<u>4,458</u>	<u>4,336</u>	<u>4,150</u>
GRAND TOTAL	<u>62,231</u>	<u>68,533</u>	<u>66,769</u>	<u>74,041</u>	<u>72,994</u>

1/ October - September crop year. Actual production in the countries where the crush is taking place, and in the period shown, irrespective of whether from old or new crop.

2/ Preliminary

3/ Estimated.

SOURCE: "Oil World", Hamburg, November 11, 1977.



### CHAPTER 3

#### CANADIAN PRODUCTION AND TRADE IN FATS AND OILS

##### Canadian Oilseeds: Acreage, Yield, Production

Canada produces four oilseeds: rapeseed, flaxseed, soybeans and sunflowerseed. These are crushed to produce oil and meal for food and industrial uses and as a protein ingredient in livestock feeds. Additional volumes of oils and meals are imported to help fill domestic needs.

Rapeseed continues to be Canada's leading oilseed crop, with production in 1977 of 1.8 million metric tons. Exports in 1977 increased by 33 per cent to slightly over 1 million metric tons. In addition, approximately 25 million bushels of rapeseed were crushed in six processing plants, to produce 236,000 tonnes of oil, and approximately 325,000 tonnes of meal. Two more processing plants are scheduled to begin crushing in 1979, which should result in more rapeseed being processed prior to export as oil and meal.

Export markets for rapeseed are mainly Japan and the EEC, where rapeseed processing facilities exist.

Due to a larger acreage and a record average yield, production of rapeseed in 1977 increased by 112 per cent over 1976. To some degree, this was a producer response to relatively attractive prices vis-a-vis cereal grains. Further increases are projected for 1978, for the same reason.

Flaxseed acreage increased by 78 per cent in 1977 to 1.42 million acres. Production rose to 610,000 metric tons versus 277,000 the previous year. There are at present two crushers of flaxseed in Canada. Exports of linseed oil and meal are minimal, with most markets preferring to import flaxseed for processing.

Soybean production in 1977 rose to 517,000 metric tons from 250,400 tons the previous year. This increase was mainly due to a 32 per cent increase in acreage coupled with a 56.4 per cent increase in yield per acre. The record production in 1977 of 517,100 metric tons increased Canada's self-sufficiency in soybeans, with imports dropping to 317,970 metric tons in 1977 from 397,577 metric tons in 1976.

Sunflowerseed production increased in 1977 to 79,400 metric tons from 24,000 in 1976, and the long-term average of 30,000 tonnes. The Canadian and export markets could absorb much more of this product, if production could be increased.

Mustardseed production more than doubled in 1977 over the previous year. This crop is grown mainly under contract and mainly for export in unprocessed form.

#### Canadian Production of Fats and Oils

Canadian production of edible vegetable oils showed an increase of 29 per cent in 1977 over the previous year. Rapeseed oil accounted for virtually all of this increase, mainly because of increased processing capacity in Western Canada.

Production of animal fats was slightly lower in 1977. Tallow and butter production declined while lard increased slightly.

Marine oil production decreased, reflecting a further decline in fish production, particularly herring.

In the inedible oil sector, production increased by 2 per cent, mainly of inedible tallow.

#### Canadian Imports of Fats and Oils

Imports of fats and oils in 1977 declined to 225,000 metric tons, compared to 281,000 in 1976. All of the decrease was in the edible oil sector. The principal reason for the decrease was the increased availability of indigenous rapeseed, soybean and sunflowerseed oils.

Imports of animal fats decreased while marine oil imports rose, due to short domestic supplies of the latter.

#### Canadian Exports of Fats and Oils

Exports of edible vegetable oils, in seed or oil forms, increased by 45 per cent in 1977, reflecting strong export demand. Rapeseed and rapeseed oil made up virtually all of the increase in export volume.

Butter exports declined sharply to 273 metric tons compared with 2,861 in 1976. Marine oil exports were down by 22 per cent.

In the inedible sector, exports increased by 31 per cent, mainly because of increased flaxseed and inedible tallow exports. Inedible marine oils also showed an increase over the 1976 volume.

Rapeseed oil was exported in much larger volume and to many more destinations during 1977. Volume rose to 102,700 metric tons versus 42,501 tonnes in 1976, while the number of markets increased to 17, versus 7 in 1976. This trend is expected to continue during 1978, due to the continuing increase in rapeseed crushing capacity in Canada.

Canadian Crashings of Vegetable Oilseeds and Production of Oil  
And Meal by Crop Year

The volume of rapeseed processed in Canada continued to increase during 1977. There are now six processing plants, with two more plants due to commence operations in 1978. This development means that more oil and meal is available for domestic and export markets.

Soybean processing during the 1976/77 crop year declined from the previous year. Data for sunflowerseed is not available due to secrecy requirements.

### CANADIAN OILSEEDS: ACREAGE, YIELD, PRODUCTION

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
			(Thousands of Acres)					(Yield Per Acre, Bushels)		
Flaxseed	1,450	1,450	1,400	800	1,420	13.4	9.5	12.5	13.6	16.9
Rapeseed	3,150	3,160	4,020	1,778	3,330	16.9	16.2	17.9	20.8	23.5
Soybeans	470	415	390	378	500	31.0	24.8	34.6	24.3	38.0
							(Yield Per Acre, Pounds)			
Mustardseed	335	350	163	78	182	782	743	678	894	962
Sunflowerseed	129	21	62	50	165	705	867	1,065	1,060	1,061
			<u>Production</u>				<u>Oil Equivalent</u>			
			(Metric Tons)				(Metric Tons)			
Flaxseed	492,786	350,538	444,613	276,900	609,700	174,634	124,091	157,361	105,209	215,810
Rapeseed	1,206,568	1,163,476	1,723,668	836,900	1,775,800	482,627	465,390	654,097	371,960	710,332
Soybeans	396,527	280,045	366,808	250,400	517,100	70,307	49,569	64,926	44,551	91,526
Mustardseed	118,842	117,935	50,122	35,200	79,300	-	-	-	-	-
Sunflowerseed	41,232	8,255	29,937	24,000	79,400	16,329	3,302	11,975	9,600	31,751

Oil Conversion Factors:	
Flaxseed.....	35.4%
Rapeseed.....	40.0%
Soybeans.....	17.7%
Sunflowerseed.....	40.0%
Mustardseed.....	Oil Content Varies with Variety



TABLE 6

## CANADIAN OILSEED PRODUCTION BY PROVINCE

	A R E A <sup>1/</sup>			YIELD PER ACRE			P R O D U C T I O N <sup>2/</sup>		
	1975	1976	1977	1975	1976	1977	1975	1976	1977
<u>FLAXSEED</u>	(Bushels)								
Manitoba	303	212	304	11.2	12.0	16.8	213,371	160,028	332,127
Saskatchewan	182	81	223	13.1	17.0	17.3	149,968	86,400	241,300
Alberta	61	30	49	16.0	16.0	15.3	81,284	30,500	48,300
<u>RAPESEED</u>	(Bushels)								
Manitoba	303	101	182	16.7	18.0	25.3	283,498	102,059	258,500
Saskatchewan	728	304	567	13.3	22.8	24.6	748,435	387,800	782,400
Alberta	682	304	567	17.9	19.7	22.1	691,735	335,700	703,100
British Columbia	23	11	32	15.7	17.9	17.5	24,947	11,300	31,800
<u>SOYBEANS</u>	(Bushels)								
Ontario	157	153	202	34.6	24.3	38.0	366,808	251,741	517,091
<u>SUNFLOWERSEED</u>	(Pounds)								
Manitoba	25	20	67	1,065	1,060	1,061	29,945	24,047	79,400
<u>MUSTARDSEED</u>	(Pounds)								
Manitoba	9	7	16	630	800	900	6,579	6,500	16,300
Saskatchewan	30	19	40	658	894	1,050	22,686	19,000	47,600
Alberta	26	9	17	719	973	816	20,871	9,700	15,400

<sup>1/</sup> Thousands of hectares.

<sup>2/</sup> Metric Tons.

SOURCE: Statistics Canada, Catalogue No. 22-002.

TABLE 7

## CANADIAN PRODUCTION OF FATS AND OILS

(Metric Tons)

	<u>1 9 7 3</u>	<u>1 9 7 4</u>	<u>1 9 7 5</u>	<u>1 9 7 6</u>	<u>1 9 7 7</u>
<u>PRIMARILY EDIBLE <sup>1/</sup></u> <u>VEGETABLE OILS</u>					
Soybean Oil <sup>2/</sup>	91,421	122,417	113,106	117,328	116,915
Rapeseed Oil <sup>3/</sup>	144,580	112,873	124,773	155,370	235,797
Sunflowerseed Oil <sup>4/</sup>	13,233	7,913	3,172	x <sup>11/</sup>	x <sup>11/</sup>
TOTAL <sup>5/</sup>	<u>249,234</u>	<u>243,203</u>	<u>241,051</u>	<u>272,698</u>	<u>352,712</u>
<u>ANIMAL FATS</u>					
Edible Tallow	18,476	16,883	17,000	16,438	14,615
Lard	50,415	50,216	43,240	42,795	44,308
Butter (as butter oil) <sup>13/</sup>	<u>80,096</u>	<u>88,258</u>	<u>106,425</u>	<u>96,015</u>	<u>94,366</u>
TOTAL	<u>148,987</u>	<u>155,357</u>	<u>166,665</u>	<u>155,248</u>	<u>153,289</u>
<u>MARINE OILS <sup>13/</sup></u>					
Herring	11,732	7,122	5,044	2,341	1,899
Seal	--	--	--	659	484
Whale <sup>7/</sup>	283	--	--	--	--
Other <sup>8/</sup>	--	428	44	53	328
TOTAL <sup>9/</sup>	<u>12,015</u>	<u>7,550</u>	<u>5,088</u>	<u>3,053</u>	<u>2,711</u>
<u>TOTAL EDIBLE OIL</u> <u>PRODUCTION</u>	<u>410,236</u>	<u>406,110</u>	<u>412,804</u>	<u>430,999</u>	<u>508,712</u>

TABLE 7 (Cont'd)

	<u>1 9 7 3</u>	<u>1 9 7 4</u>	<u>1 9 7 5</u>	<u>1 9 7 6</u>	<u>1 9 7 7</u>
<u>PRIMARILY INEDIBLE</u>					
Linseed Oil <u>10/</u>	13,572	x <u>11/</u>	x <u>11/</u>	x <u>11/</u>	x <u>11/</u>
Inedible Tallow	186,003	182,727	182,491	199,183	202,738
Marine Oils <u>12/13/</u>	925	2,869	4,471	3,146	3,614
<u>TOTAL INEDIBLE OILS</u> <u>PRODUCTION</u>	<u>200,500</u>	<u>185,596</u>	<u>186,962</u>	<u>202,329</u>	<u>206,352</u>
<u>TOTAL EDIBLE AND INEDIBLE</u> <u>FATS AND OILS PRODUCTION</u>					
(Excluding Linseed Oil in 1974, 1975, 1976 & 1977 & Sunflowerseed Oil in 1976 & 1977	<u>610,736</u>	<u>591,706</u>	<u>599,766</u>	<u>633,328</u>	<u>715,064</u>

1/ Production data for corn oil and cocoa butter are confidential and have not been included.

2/ Soybean oil output of Canadian crushing mills.

3/ Rapeseed oil output of Canadian crushing mills. The Grain Research Laboratory of the Canadian Grain Commission has reported the average oil content of carlot survey samples of rapeseed on an 8.5% moisture basis as follows:

1973	40.2%
1974	39.9%
1975	40.9%
1976	41.3%
1977	41.9%

4/ Sunflowerseed oil output of Canadian crushing mills.

5/ Includes only crude vegetable oils produced in Canadian mills.

6/ Butter oil represents the oil equivalent of creamery butter, farm butter and whey butter production, using 81% as the conversion factor.

7/ Whale oil production includes small amounts of other unspecified marine oils.

8/ Other oil production includes seal oils in 1974, 1975 and 1976.

9/ Small quantities of salmon oil (West Coast) and of redfish oil (East Coast) of edible grade cannot be identified statistically and are included under "Marine Oils" in the inedible category below.

TABLE 7 (Cont'd)

10/ Linseed oil output of Canadian crushing plants. The Grain Research Laboratory of the Canadian Grain Commission has reported the average oil content (dry matter basis) of carlot survey samples of flaxseed as follows:

1973	41.9%
1974	43.5%
1975	42.1%
1976	43.0%
1977	44.3%

11/ Confidential - to meet secrecy requirements of Statistics Act.

12/ Includes liver oils, groundfish oil, salmon oil and small amounts of unspecified oils.

13/ Revised figures for 1976.

SOURCE: Statistics Canada, Catalogue Nos. 22-006, 24-002, 32-002, 32-020.



TABLE 2

## CANADIAN IMPORTS OF FATS AND OILS

(Metric Tons)

PRIMARILY EDIBLE					
<u>Vegetable Oils</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Soybeans (Oil Equiv.)	41,027	69,169	68,227	70,371	56,280
Soybean Oil	18,971	33,614	20,831	31,205	28,138
Cottonseed Oil	8,402	11,333	11,289	5,200	5,407
Corn Oil	6,604	10,358	10,172	16,418	15,482
Peanut Oil	7,382	5,519	6,848	6,734	6,845
Coconut Oil	21,299	21,956	25,816	29,647	24,218
Palm Oil	19,580	16,199	41,283	55,001	31,179
Palm Kernel Oil	5,044	4,376	5,093	10,351	7,192
Olive Oil	2,088	2,403	1,987	5,096	4,840
Cocoa Butter	6,595	5,378	4,362	5,008	4,835
Sunflowerseed Oil	77	186	170	271	50
Vegetable Oils & Fats	4,504	5,973	2,965	3,156	2,270
Vegetable Cooking Fats & Packaged Salad Oils	1,031	1,461	693	144	423
Margarine & Shortening Oils	1,448	11,983	15,546	16,322	14,090
TOTAL <sup>1/</sup>	144,956	199,918	215,332	254,924	201,348
<u>Animal Fats</u>					
Lard	7,160	17,680	12,118	19,246	17,841
Butter <sup>2/</sup>	23,013	19,754	4,565	12	13
TOTAL	30,173	37,435	16,683	19,258	17,854
<u>Marine Oils</u>					
Fish & Marine Oil	1,239	849	879	299	410
TOTAL	1,239	849	879	299	410
TOTAL EDIBLE OILS & FATS	176,369	239,202	232,894	274,481	219,612
PRIMARILY INEDIBLE					
Castor Oil	2,738	1,850	1,909	1,313	1,311
Tung Oil	1,242	425	692	734	699
Inedible Tallow <sup>3/</sup>	2,779	3,539	1,668	832	590
Animal Oil & Fats <sup>4/</sup>	475	808	437	652	568
Animal Grease	2,517	2,612	4,154	1,790	1,790
TOTAL INEDIBLE OILS & FATS	9,802	9,205	8,910	5,331	4,958
TOTAL EDIBLE & INEDIBLE FATS & OILS IMPORTS	186,172	247,408	241,804	281,025	224,570

TABLE 3 (Cont'd)FOOTNOTES TOCANADIAN IMPORTS OF FATS AND OILS

- 1/ Vegetable oil total includes the oil equivalent of the imported soybeans. This is justified because the soybeans are crushed in Canada for oil and meal production.
- 2/ Butter imports have been converted to oil equivalent, using the factor of 81%.
- 3/ This class includes both edible and inedible tallow. The proportions are not known.
- 4/ This category includes Animal Grease, NES and Wool Grease and Lanolin.

SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 9

## CANADIAN EXPORTS OF FATS AND OILS

(Metric Tons)

PRIMARILY EDIBLE

<u>Vegetable Oils</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Soybeans (Oil Equiv.)	4,771	5,034	1,541	4,363	6,697
Soybean Oil	3,360	8,148	2,074	--	23
Rapeseed (Oil Equiv.)	477,474	246,394	270,479	309,949	411,177
Rapeseed Oil	34,805	27,669	19,811	42,501	102,700
Sunflowerseed (Oil Equiv.)	12,459	8,467	3,186	3,800	10,441
Margarine & Shortening	147	352	268	706	634
Vegetable Oil & Fats	13,252	763	944	6,974	1,413
TOTAL <sup>1/</sup>	546,269	296,828	298,303	368,293	533,085

Animal Fats

Butter (Oil Equiv.) <sup>2/</sup>	2	3	23	2,861	273
TOTAL	2	3	23	2,861	273

Marine Oils

Herring Oil	2,833	5,524	2,277	5,315	4,124
Whale Oil	1,259	--	--	5	14
TOTAL	4,093	5,524	2,277	5,320	4,138

TOTAL EDIBLE FATS & OILS(Including Oil Equiv.  
of Oilseeds)

550,362	302,356	300,603	376,474	537,496
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PRIMARILY INEDIBLE

Flaxseed (Oil Equiv.)	153,355	124,267	86,709	87,297	116,595
Linseed Oil	6,080	592	3,562	5,108	5,717
Inedible Tallow <sup>3/</sup>	81,926	98,740	97,871	109,884	140,829
Marine Oils <sup>4/</sup>	2,683	2,338	2,615	4,789	11,902
Animal Fats and Oils	5,116	2,718	1,463	3,282	6,931

TOTAL INEDIBLE FATS & OILS

249,162	228,656	192,210	210,370	275,736
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TOTAL EDIBLE & INEDIBLE  
FATS AND OILS

799,525	531,012	492,823	586,844	813,232
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TABLE 9 (Cont'd)

FOOTNOTES TO  
CANADIAN EXPORTS OF FATS AND OILS

- 1/ The margarine portion cannot be separated, consequently it was not converted to fat equivalent. Oil equivalent of oilseeds are included in all totals. It is justified to include the oil equivalents of exported oilseeds into the total of fats and oil exports, since it represents a form of oil export and does not involve a duplication of data. Starting in 1973 rapeseed oil exports are reported separately and are no longer included under "Vegetable Oils and Fats".
- 2/ Butter exports have been converted to oil equivalent, using the factor of 81%.
- 3/ This class includes both edible and inedible tallow. The proportions are not known.
- 4/ Marine oil exports listed under "Inedible Oils" include sun-rotted cod liver oil, a non-specified group of fish and marine oil, and fish liver and visceral oils. While most of these oils can be assumed to be of an inedible grade, a small quantity of edible oil may have been included.

SOURCE: Statistics Canada, Catalogue No. 65-007.



TABLE 10

CANADIAN CRUSHINGS OF VEGETABLE OILSEEDS AND  
PRODUCTION OF OIL AND MEAL BY CROP YEAR

(Metric Tons)

<u>CRUSHINGS</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>
Flaxseed	66,890	19,346	$\frac{1}{x-}$	$\frac{1}{x-}$	$\frac{1}{x-}$
Rapeseed	353,178	334,414	275,973	347,161	549,716
Soybeans	612,552	642,310	635,110	722,988	684,999
Sunflowerseed	31,717	28,212	7,134	20,029	$\frac{1}{x-}$
TOTAL	<u>1,064,337</u>	<u>1,024,282</u>	<u>918,217</u>	<u>1,090,178</u>	<u>1,234,709</u>
<u>OIL PRODUCTION</u>					
Flaxseed	22,762	6,601	$\frac{1}{x-}$	$\frac{1}{x-}$	$\frac{1}{x-}$
Rapeseed	133,966	125,631	108,483	141,698	225,805
Soybeans	99,125	109,169	108,344	122,694	115,616
Sunflowerseed	13,009	11,234	2,671	8,328	$\frac{1}{x-}$
TOTAL	<u>268,862</u>	<u>252,635</u>	<u>219,498</u>	<u>272,720</u>	<u>341,421</u>
<u>MEAL PRODUCTION</u>					
Flaxseed	42,037	11,932	$\frac{1}{x-}$	$\frac{1}{x-}$	$\frac{1}{x-}$
Rapeseed	204,169	193,932	157,763	197,376	314,903
Soybeans	482,973	503,368	499,183	569,467	540,689
Sunflowerseed	11,811	10,558	2,553	7,266	$\frac{1}{x-}$
TOTAL	<u>740,990</u>	<u>719,790</u>	<u>659,499</u>	<u>774,109</u>	<u>855,592</u>

1/ Confidential - to meet secrecy requirements of the Statistics Act.

SOURCE: Statistics Canada, Catalogue No. 22-006.

## CHAPTER 4

### THE CANADIAN RAPESEED SITUATION

#### Canadian Rapeseed Production

Rapeseed production continued its variable tendencies, declining to 836,886 tonnes in the 1976/77 crop year from 1,748,616 the previous year. The 1977/78 crop year saw production rise again to an estimated 1,775,800 metric tons. A further increase is projected for the crop year 1978/79.

#### Canadian Exports of Rapeseed

In 1977, exports of rapeseed increased to slightly over 1 million tonnes, reflecting strong demand. Japan and the EEC continued to be our main export markets. Rapeseed shipments as food aid have been sharply reduced and replaced by rapeseed oil.

#### Canadian Exports of Rapeseed Oil

Additional new crushing capacity has lead to increased export availability of rapeseed oil. Demand was strong for this oil during 1977, and the volume exported rose to 91,648 tonnes for the crop year 1976/77, and 102,700 tonnes for calendar year 1977.

#### Canadian Exports of Rapeseed Meal

Rapeseed meal exports rose to 107,088 tonnes in 1977 versus only 27,984 tonnes in 1976. This reflects the improved quality of the rapeseed meal now available plus the increase in domestic crushing activity.

#### Canadian Rapeseed Prices

Rapeseed is traded on the Winnipeg Commodity Exchange. Prices follow the general trend for soybeans, oil and meal traded on the Chicago market. During the current crop year, prices have been above soybean prices, due to the buoyant world market for edible oils.

TABLE 11CANADIAN SUPPLY AND DISPOSITION OF RAPESEEDRAPESEED OIL AND RAPESEED MEAL

(Crop Year)

<u>RAPESEED</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>
	(Metric Tons)				
Stocks, Starting	978,386	468,974	280,912	399,913	1,048,648
Production	1,299,555	1,206,568	1,163,476	1,748,616	836,886
Exports	1,226,050	888,664	592,987	683,026	1,017,871
Domestic Crushings	353,170	334,414	275,968	347,160	549,714
<u>RAPESEED OIL</u>					
Exports	24,983	34,488	19,240	32,633	91,648
Domestic Production	133,966	125,631	108,483	141,698	225,806
<u>RAPESEED MEAL</u>					
Exports	19,452	47,580	10,672	27,984	107,088
Domestic Production	204,169	193,932	157,763	197,376	314,903

SOURCE: Statistics Canada, Catalogue No. 22-006.

TABLE 12  
CANADIAN EXPORTS OF RAPESEED  
(Metric Tons)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Algeria	--	--	--	--	38,266
Australia	20,613	14,739	--	--	5
Bangladesh	81,048 <sup>2/</sup>	18,012 <sup>3/</sup>	47,688 <sup>4/</sup>	25,662 <sup>8/</sup>	17,530
Belgium-Luxembourg	2,092	358	508	--	248
Brazil	--	12	--	--	27
Denmark	4,536	--	--	--	18
Finland	--	--	--	103	82
France	17,118	--	--	--	1,519
Germany, West	87,970	23,418	5,651	15,058	66,843
India	51,302 <sup>5/</sup>	4,521 <sup>6/</sup>	14,142 <sup>7/</sup>	--	13,650
Italy	86,121	896	2,008	2,956	1,930
Japan	710,987	493,947	579,385	687,076	746,082
Korea, South	24,474	--	--	7,268	--
Lebanon	--	--	--	--	--
Mexico	23,502	38,731	--	--	--
Mozambique	--	--	--	--	7,700
Netherlands	61,895	20,680	18,426	16,682	111,876
Norway	--	--	--	--	2,656
Pakistan	--	--	--	--	--
Peru	--	2	--	--	--
Romania	--	1	--	--	--
Singapore	--	--	--	--	12,887
Spain	1,004	--	919	4	70
Sweden	13	1/	56	211	104
Switzerland	--	--	3,953	--	--
Taiwan	18,024	--	--	--	--
United Kingdom	3,048	999	3,324	13,358	5,884
United States	2	104	123	6,491	563
Venezuela	--	--	9	--	--
Yugoslavia	--	--	--	--	3
<b>TOTAL</b>	<b>1,193,666</b>	<b>615,975</b>	<b>676,199</b>	<b>774,873</b>	<b>1,027,943</b>

1/ Less than one metric ton.

2/ CIDA reports 27,140 metric tons shipped under bilateral food aid in the crop year 1972/73.

3/ CIDA reports 30,162 metric tons shipped under bilateral food aid in the crop year 1973/74.

4/ CIDA reports 9,432 metric tons shipped under bilateral food aid in the crop year 1974/75.

5/ CIDA reports 51,302 metric tons shipped under bilateral food aid in the crop year 1972/73.

6/ CIDA reports 4,521 metric tons shipped under bilateral food aid in the crop year 1973/74.

7/ CIDA reports 23,582 metric tons shipped under bilateral food aid in the crop year 1974/75.

8/ CIDA reports 16,787 metric tons shipped under bilateral food aid in the crop year 1975/76.

SOURCE: Statistics Canada, Catalogue No. 65-004.

TABLE 13

CANADIAN EXPORTS OF RAPESEED OIL

(Metric Tons)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Algeria	--	--	--	--	3,216
Australia	395	538	122	--	2,917
Bangladesh	295 <sup>1/</sup>	--	--	5,542 <sup>4/</sup>	7,000
Chile	11,159	--	--	--	--
Ecuador	--	--	--	--	504
Egypt	--	--	--	745	2,160 <sup>5/</sup>
France	1	--	--	--	--
Germany, West	--	--	--	--	2,217
Haiti	--	--	--	--	2,434
Hong Kong	2,304	--	590	2,069	5,133
India	5,050	13,237 <sup>2/</sup>	9,438 <sup>3/</sup>	23,248 <sup>4/</sup>	66,794 <sup>6/</sup>
Japan	13,695	3,381	3,019	8,481	6,415 <sup>7/</sup>
Lebanon	--	--	--	290	650 <sup>8/</sup>
Madagascar	--	--	--	--	284
Netherlands	13	--	3,202	--	--
Portugal	--	--	--	--	123
Tunisia	--	--	--	--	131 <sup>9/</sup>
United Kingdom	1,176	1,240	2,476	--	--
United States	711	8,268	963	2,124	2,064
Viet Nam	--	--	--	--	728
Yemen	--	--	--	--	20
Zambia	--	1,002	--	--	--
TOTAL	34,805	27,669	19,811	42,501	102,700
TOTAL VALUE (\$'000)	10,223	14,133	15,683	23,081	61,907

<sup>1/</sup> CIDA reports 4,493 metric tons shipped under bilateral food aid in the crop year 1972/73.

<sup>2/</sup> CIDA reports 13,694 metric tons shipped under bilateral food aid in the crop year 1973/74.

<sup>3/</sup> CIDA reports 7,364 metric tons shipped under bilateral food aid in the crop year 1974/75.

<sup>4/</sup> CIDA reports 17,455 metric tons shipped under bilateral food aid in the crop year 1975/76.

<sup>5/</sup> CIDA reports 3,500 metric tons shipped under bilateral food aid in the crop year 1976/77.

<sup>6/</sup> CIDA reports 35,081 metric tons shipped under bilateral food aid in the crop year 1977/78.



TABLE 13 (Cont'd)FOOTNOTES TOCANADIAN EXPORTS OF RAPESEED OIL

- 7/ CIDA reports 1,328 metric tons shipped under World Food Program in the crop year 1977/78.
- 8/ CIDA reports 491 metric tons shipped under World Food Program in the crop year 1977/78.
- 9/ CIDA reports 707 metric tons shipped under World Food Program in the crop year 1977/78.

SOURCE: Statistics Canada, Catalogue No. 65-004.

TABLE 14CANADIAN EXPORTS OF RAPESEED OILCAKE AND MEAL

(Metric Tons)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Barbados	9	269	--	--	--
Chile	5,499	--	--	--	--
France	--	--	--	--	3,675
Cuba	20	--	--	--	1,005
Denmark	--	--	--	--	4,532
Germany, West	1,451	16	1,965	4,686	57,565
Ireland	--	--	--	--	1,000
Jamaica	--	3	--	--	--
Japan	1	--	--	121	4,001
Korea, South	7,597	--	--	--	--
Mexico	3,039	5,811	--	--	--
Netherlands	6,702	10,738	5,756	26,941	7,967
Norway	--	--	--	--	24,395
Philippines	3,710	609	--	--	--
Taiwan	--	--	--	--	2,051
United Kingdom	11,616	7,620	12,392	16,127	21,968
United States	1,608	5,840	552	3,696	8,232
TOTAL	<u>41,257</u>	<u>30,911</u>	<u>20,666</u>	<u>51,573</u>	<u>136,393</u>
TOTAL VALUE (\$'000)	<u>6,198</u>	<u>3,218</u>	<u>2,115</u>	<u>6,089</u>	<u>19,639</u>

SOURCE: Statistics Canada, Catalogue No. 65-004.

QUALITY DATA FOR WESTERN CANADIAN RAPESEED,  
SURVEY SAMPLES OF 1976 AND 1977 CROPS

WESTERN CANADIAN	1976 Survey				1977 Survey			
	Oil Content	Erucic Acid Content	Protein- Content	No. of Samples	Oil- Content	Erucic Acid Content	Protein- Content	No. of Samples
No. 1 CRS	41.3	2.3	36.3	421	41.9	1.6	36.1	387
No. 2 CRS	40.6	0.9	39.3	22	41.9	1.5	38.2	54
No. 3 CRS	-	-	-	-	42.9	1.0	36.9	1
All Grades	41.3	2.3	36.4	443	41.9	1.6	36.4	443
ALL GRADES BY PROVINCE								
Manitoba	41.8	2.1	38.6	61	42.1	1.7	37.3	79
Saskatchewan	41.9	1.5	36.6	205	42.5	1.0	36.7	173
Alberta	40.5	3.2	35.4	177	41.4	2.1	35.7	191

1/ Oil content of seed is reported on an 8.5% moisture basis.

2/ Protein content is reported on the oil-free meal and an 8.5% moisture basis.

SOURCE: Canadian Grain Commission, Crop Bulletins Nos. 133 and 137.

TABLE 16

SUMMERFALLOW AND STUBBLE CULTIVATION OF RAPESEED

	<u>Summer- fallow</u>	<u>Stubble</u>	<u>Total</u>
<u>Seeded Area</u>	<u>('000 Acres)</u>		
1973	2,410	740	3,150
1974	2,346	754	3,100
1975	3,170	1,080	4,250
1976	1,731	379	1,750
1977	2,291	959	3,250
<u>Distribution</u>	<u>(Per Cent)</u>		
1973	77	23	100
1974	76	24	100
1975	75	25	100
1976	78	22	100
1977	70	30	100
<u>Average Yield Per Seeded Acre</u>	<u>(Bushels)</u>		
1973	17.9	13.5	16.9
1974	17.2	13.4	16.3
1975	19.0	14.7	17.9
1976	22.2	15.6	20.8
1977	25.1	20.3	23.7
<u>Production</u>	<u>(Metric Tons)</u>		
1973	980,223	226,345	1,206,568
1974	913,998	229,066	1,143,064
1975	1,363,059	360,609	1,723,668
1976	691,735	133,811	825,546
1977	1,301,823	442,257	1,744,080

SOURCE: Statistics Canada, Catalogue No. 22-002

TABLE 17CANADIAN RAPESEED PRICES <sup>1/</sup>

(Crop Year)

<u>MONTH</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>
	.....Cents and Eighths Per Bushel.....				
August	244/7	649/7	821/2	666/2	527
September	253/3	536/4	851/4	595/3	557/6
October	256/1	493/7	955/5	533/1	513/3
November	260/5	482/5	902	495/3	579/4
December	295/5	566/6	812/3	441	549/4
January	325/6	655/1	731/7	451/6	578
February	374/4	706/1	639/3	467/7	788/3
March	361	677/7	620/2	465/4	712/3
April	376/2	608/7	643/3	455/7	828
May	399/1	702/1	568/5	479/3	837
June	537/7	738/6	545/3	540/5	759/4
July	<u>682/4</u>	<u>796</u>	<u>587/4</u>	<u>580/4</u>	<u>634/6</u>
Yearly Average	<u>364</u>	<u>634/4</u>	<u>723/2</u>	<u>514/3</u>	<u>655/3</u>

<sup>1/</sup> Winnipeg Grain Exchange No. 1 Canadian Rapeseed,  
basis in-store Thunder Bay.

SOURCE: Statistics Canada, Catalogue No. 22-006.



## CHAPTER 5

### THE CANADIAN SOYBEAN SITUATION

#### Canadian Supply and Disposition

Soybean production during the crop year 1976/77 declined from preceding years. This necessitated an increase in imports from the United States to fill domestic needs.

Interest is continuing on the part of the Japanese as regards edible grade soybeans and soybean products produced in Canada.

#### Canadian Imports of Soybeans and Soybean Oil

During 1977, imports of soybeans declined, as did imports of soybean oil. The main reason for this decline was the increased availability of rapeseed oil from domestic sources. Rapeseed oil became the leading oil in Canada during 1977, with 36 per cent of the market compared with 33 per cent for soybean oil. Increased supplies of Canadian - produced soybeans in 1977 also were a factor in reducing the import requirement.

#### Imports of Soybean Meal

Soybean meal imports were slightly reduced during the crop year 1976/77 compared with the previous year.

#### Canadian Exports of Soybeans

Canadian soybean exports consist mainly of edible grade beans to specialized markets such as Japan and Hong Kong. There are also small shipments to other markets for processing into oil and meal.

#### Canadian Exports of Soybean Oil and Meal

Canadian exports of soybean oil were virtually zero in 1977. Meal exports declined to 51,333 metric tons, reflecting the downward trend which commenced with the entry of the United Kingdom into the EEC.

TABLE 18

CANADIAN SUPPLY AND DISPOSITION OF SOYBEANS,  
SOYBEAN OIL AND SOYBEAN MEAL  
 (Crop Year)

<u>SOYBEANS</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>
	(Metric Tons)				
Production	374,755	396,527	300,457	366,808	250,384
Imports	298,633	340,354	344,273	371,026	391,608
Exports	28,902	28,875	9,498	22,289	24,820
Domestic Crushings	612,535	642,309	635,096	722,975	684,995
<u>SOYBEAN OIL</u>					
Imports	16,459	33,395	19,557	30,810	26,704
Exports	12,547	4,942	5,587	1,043	-
Domestic Production	99,125	109,169	108,344	122,694	115,616
<u>SOYBEAN MEAL</u>					
Imports	219,872	232,974	271,149	343,814	339,244
Exports	118,066	94,087	83,527	69,335	51,333
Domestic Production	482,973	503,368	499,183	569,467	540,689

SOURCE: Statistics Canada, Catalogue No. 22-006.

TABLE 19

CANADIAN IMPORTS OF SOYBEAN AND SOYBEAN OILSoybeans  
(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Germany, West	--	2	1	--	--
Hong Kong	12	<u>1/</u>	3	17	6
Japan	2	2	4	--	8
Peoples' Republic of China	20	20	13	--	9
Singapore	--	--	--	--	4
Sweden	--	--	--	--	<u>1/</u>
United Kingdom	<u>1/</u>	--	--	--	8
United States	<u>231,749</u>	<u>390,756</u>	<u>385,444</u>	<u>397,560</u>	<u>317,935</u>
TOTAL	<u>231,784</u>	<u>380,781</u>	<u>385,465</u>	<u>397,577</u>	<u>317,970</u>
TOTAL VALUE (\$'000)	<u>50,360</u>	<u>90,505</u>	<u>86,210</u>	<u>81,136</u>	<u>98,953</u>

Soybean Oil  
(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
France	--	<u>1/</u>	1	--	--
United States	<u>18,971</u>	<u>33,614</u>	<u>20,881</u>	<u>31,205</u>	<u>28,138</u>
TOTAL	<u>18,971</u>	<u>33,614</u>	<u>20,882</u>	<u>31,205</u>	<u>28,138</u>
TOTAL VALUE (\$'000)	<u>8,264</u>	<u>24,829</u>	<u>14,394</u>	<u>14,223</u>	<u>17,216</u>

1/ Less than one metric ton.

IMPORTS OF SOYBEAN OIL BY PROVINCE

	<u>1 9 7 3</u>		<u>1 9 7 4</u>		<u>1 9 7 5</u>		<u>1 9 7 6</u>		<u>1 9 7 7</u>	
	Metric Tons	'000 of \$	Metric Tons	'000 of \$	Metric Tons	'000 of \$	Metric Tons	'000 of \$	Metric Tons	'000 of \$
Nova Scotia	39	17	--	--	1	1/	10	6	--	--
New Brunswick	948	393	1,366	1,033	1,614	1,267	1,036	545	1,199	791
Quebec	873	446	5,897	3,871	1,490	822	2,056	788	436	282
Ontario	11,775	5,114	16,913	13,143	11,681	8,196	17,767	8,396	16,367	10,321
Manitoba	2,338	993	4,458	3,184	2,752	1,572	4,646	1,865	4,160	2,191
Saskatchewan	--	--	95	73	250	155	225	100	490	264
Alberta	162	72	970	599	343	236	1,931	734	3,246	1,896
British Columbia	2,830	1,225	3,912	2,922	2,747	2,142	3,532	1,783	2,238	1,468
TOTAL	18,969	8,260	33,613	24,825	20,881	14,394	31,205	14,222	28,137	17,216

1/ Less than \$1,000.

SOURCE: Statistics Canada, Unpublished Data.

TABLE 21

## IMPORTS OF SOYBEAN MEAL BY PROVINCE

	1 9 7 3		1 9 7 4		1 9 7 5		1 9 7 6		1 9 7 7	
	Metric Tons	'000 of \$	Metric Tons	'000 of \$	Metric Tons	'000 of \$	Metric Tons	'000 of \$	Metric Tons	'000 of \$
Newfoundland	--	--	--	--	129	18	--	--	--	--
Nova Scotia	3,084	477	133	29	3,288	521	19	3	2,913	679
New Brunswick	36	4	72	13	129	18	5,569	1,369	7,797	2,418
Quebec	36,719	5,312	65,673	10,399	91,146	20,062	118,447	25,368	99,456	26,329
Ontario	47,879	14,048	57,704	10,897	49,312	8,574	57,881	12,891	84,149	21,713
Manitoba	46,432	11,245	77,965	14,627	63,070	9,975	69,789	12,250	68,543	16,507
Saskatchewan	16,335	4,383	19,672	3,975	17,808	3,134	16,740	3,227	20,127	5,235
Alberta	21,794	5,644	27,025	5,108	37,904	6,273	42,521	7,120	38,634	9,564
B.C.	19,060	5,016	29,192	5,865	31,554	5,622	37,896	7,810	29,681	7,861
TOTAL	191,341	46,129	277,438	50,853	294,343	54,209	348,865	70,042	351,302	90,310

SOURCE: Statistics Canada, Unpublished Data.



TABLE 22CANADIAN EXPORTS OF SOYBEANS

(Metric Tons)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Belgium-Luxembourg	--	2,000	--	--	--
Bulgaria	137	--	--	--	--
France	--	63	490	73	75
Germany, West	1	561	225	10	--
Hong Kong	18	957	2,192	5,111	6,502
Hungary	--	--	--	--	3
Jamaica	2	3	4	--	--
Japan	5,103	3,830	3,041	6,825	10,976
Malaysia	--	--	--	209	227
Netherlands	145	18	--	--	3,941
Philippines	--	--	--	125	--
Romania	--	--	--	--	1,008
Singapore	--	--	1,020	9,667	2,950
Spain	--	--	213	--	8,885
Sweden	839	1,356	--	--	--
Switzerland	72	91	--	--	--
Taiwan	--	--	--	--	397
United Kingdom	20,358	4,162	30	80	246
United States	274	22	46	351	94
U.S.S.R.	--	--	--	--	--
Yugoslavia	--	--	160	--	--
Other Countries <sup>1/</sup>	--	--	--	2,199	2,533
<b>TOTAL</b>	<b>26,955</b>	<b>13,066</b>	<b>8,710</b>	<b>24,653</b>	<b>37,837</b>
<b>TOTAL VALUE (\$'000)</b>	<b>6,151</b>	<b>3,451</b>	<b>2,812</b>	<b>6,100</b>	<b>11,047</b>

<sup>1/</sup> To protect confidentiality under the Statistics Act.

TABLE 23

CANADIAN EXPORTS OF SOYBEAN OIL AND MEAL

(Metric Tons)

SOYBEAN OIL

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Bahamas	4	--	--	--	--
Germany, West	--	--	14	--	--
Jamaica	--	--	4	--	--
Leeward-Windward Islands	--	1	1	--	--
United Kingdom	3,310	7,778	1,965	--	--
United States	45	368	92	--	23
TOTAL	<u>3,359</u>	<u>8,148</u>	<u>2,076</u>	<u>--</u>	<u>23</u>
TOTAL VALUE (\$'000)	<u>1,233</u>	<u>5,663</u>	<u>1,391</u>	<u>--</u>	<u>12</u>

SOYBEAN MEAL

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Belgium-Luxembourg	6,679	--	--	--	--
Denmark	--	--	--	--	6,748
Germany, West	--	--	--	28	3,790
Guyana	--	--	--	3	--
Ireland	--	3,789	--	2,039	--
Trinidad-Tobago	--	--	1	--	--
United Kingdom	94,906	101,984	57,269	59,653	34,333
United States	9,923	9,420	1,723	987	718
TOTAL	<u>111,509</u>	<u>115,195</u>	<u>58,993</u>	<u>62,711</u>	<u>45,589</u>
TOTAL VALUE (\$'000)	<u>18,851</u>	<u>17,547</u>	<u>9,435</u>	<u>11,272</u>	<u>10,747</u>

SOURCE: Statistics Canada, Catalogue No. 65-004.

TABLE 24CANADIAN SOYBEAN PRICES <sup>1/</sup>

(Crop Year)

<u>M O N T H</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>
	.....(Cents and Eighths Per Bushel).....				
August	340/7	1040	716/2	596/5	576/7
September	325/6	605	726/6	545/5	619/7
October	310/5	557	811/4	477/3	574/4
November	342/2	553/6	723/6	435	602/4
December	391/7	583/7	678/2	420/6	664
January	428	606/2	590/6	436/3	676/1
February	567/6	644/1	506/2	441/7	709/4
March	617/5	610/2	504/2	438/1	829/1
April	646/4	534/2	527/3	437/6	937/5
May	882/4	517/1	481/8	481/2	945/5
June	1095/7	504/6	488/2	582/4	816
July	<u>929</u>	<u>642/1</u>	<u>542/7</u>	<u>611/4</u>	<u>611/7</u>
Yearly Average	<u>573/2</u>	<u>616/4</u>	<u>608/2</u>	<u>492/1</u>	<u>713/6</u>

<sup>1/</sup> Buying prices, carlots, f.o.b. Chatham, No. 2 and better.SOURCE: Statistics Canada, Catalogue No. 22-006.

## CHAPTER 6

### THE CANADIAN SUNFLOWERSEED SITUATION

#### Canadian Sunflowerseed Production

Canadian production of sunflowerseed increased sharply in 1977, when production rose to 79,379 metric tons versus 24,047 the previous year.

Manitoba produces virtually all of the sunflowerseed grown in Canada. Production is variable from year to year because of competition from other crops.

The Canadian and export markets could absorb much larger quantities of sunflowerseed and oil if production could be increased.

#### Canadian Trade in Sunflowerseed and Oil

Exports of sunflowerseed rose to 26,103 tonnes in 1977 from 9,501 tonnes in 1976. The principal markets were the EEC, Czechoslovakia and the United States.

A very small quantity of sunflowerseed oil was imported in 1977, from the United States. There were no exports of this oil from Canada in 1977.

TABLE 25CANADIAN SUNFLOWERSEED: ACREAGE, YIELD AND PRODUCTION

(Crop Year)

	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
	(Thousands of Acres)				
Manitoba	125.0	30.0	62.0	50.0	165.0
Saskatchewan	2.5	-	-	-	-
Alberta	1.5	-	-	-	-
Canada, Total	129.0	30.0	62.0	50.0	165.0

(Yield Per Acre, Pounds)

Manitoba	700	867	1,065	1,060	1,061
Saskatchewan	800	-	-	-	-
Alberta	933	-	-	-	-
Canada, Total	705	867	1,065	1,060	1,061

(Production - Metric Tons)

Manitoba	39,689	8,255	29,945	24,047	79,379
Saskatchewan	907	-	-	-	-
Alberta	635	-	-	-	-
Canada, Total	41,232	8,255	29,937	24,047	79,379

SOURCE: Statistics Canada, Catalogue No. 22-002.



TABLE 26

CANADIAN EXPORTS OF SUNFLOWERSEED

(Metric Tons)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Algeria	--	--	--	--	1,050
Australia	<u>1/</u>	--	--	17	15
Bangladesh	<u>1/</u>	2	--	2	--
Czechoslovakia	--	6,877	--	1,604	6,998
Denmark	--	--	--	18	--
France	20,357	--	--	--	--
Germany, West	69	7,244	3,825	3,590	344
Italy	8,255	--	--	--	--
Korea, South	23	--	--	--	--
Mexico	--	--	--	---	434
Netherlands	887	5,703	--	3,001	14,284
New Zealand	2	<u>1/</u>	2	<u>1/</u>	5
Portugal	--	36	2,701	--	--
Spain	161	--	526	--	--
Sweden	37	<u>1/</u>	2	4	5
United Kingdom	22	31	34	25	19
United States	1,326	1,250	874	1,238	2,949
U.S.S.R.	--	<u>1/</u>	--	--	--
TOTAL	<u>31,143</u>	<u>21,169</u>	<u>7,965</u>	<u>9,501</u>	<u>26,103</u>
TOTAL VALUE (\$'000)	<u>6,143</u>	<u>7,334</u>	<u>2,623</u>	<u>3,258</u>	<u>6,225</u>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-004.

TABLE 27CANADIAN IMPORTS OF SUNFLOWERSEED OIL

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Austria	1	3	5	--	--
France	<u>1/</u>	2	1	--	--
United States	74	178	160	271	59
U.S.S.R.	<u>--</u>	<u>1</u>	<u>4</u>	<u>--</u>	<u>--</u>
TOTAL	<u>77</u>	<u>186</u>	<u>170</u>	<u>271</u>	<u>59</u>
TOTAL VALUE (\$'000)	<u>27</u>	<u>181</u>	<u>158</u>	<u>147</u>	<u>43</u>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 28

## IMPORTS OF SUNFLOWERSEED OIL BY PROVINCE

	1 9 7 3	1 9 7 4	1 9 7 5	1 9 7 6	1 9 7 7
	Metric Tons	Metric Tons	Metric Tons	Metric Tons	Metric Tons
	'000 \$	'000 \$	'000 \$	'000 \$	'000 \$
Nova Scotia	--	--	--	1 2/	--
Quebec	2	1 7 4	8 9	2 2/	--
Ontario	74	25 178 175	50 43	38 22	4 2
Alberta	--	--	111 105	213 115	26 18
British Columbia	--	1/ 1/	1/ 2/	16 6	27 22
TOTAL	77	26 185 179	170 157	270 143	58 43

1/ Less than one metric ton.

2/ Less than \$1,000.

SOURCE: Statistics Canada, Unpublished Data.

## CHAPTER 7

### THE CANADIAN MUSTARDSEED SITUATION

#### Canadian Mustardseed Production

Mustardseed is grown largely under contract. Production in 1977 increased by 125 per cent to 79,378 metric tons, reflecting a doubling of acreage and a higher yield than the previous year.

Production is concentrated in the Prairie region, with Eastern Ontario also producing a small acreage.

#### Canadian Exports of Mustardseed

Canada is a leading exporter of mustardseed. Major markets are the EEC, Japan and the United States. The volume of mustardseed exported in 1977 was 56,438 metric tons valued at \$19,660,000, little changed from 1976.

#### Canadian Imports of Ground Mustard

Some types of ground mustard are imported in packaged form. Total imports in 1977 were 349 metric tons valued at \$548,000, versus 269 tonnes in 1976 valued at \$358,000.

TABLE 29CANADIAN MUSTARDSEED: ACREAGE, YIELD AND PRODUCTION

(Crop Year)

	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
	(Thousands of Acres)				
Manitoba	40	40	23	18	40
Saskatchewan	225	200	76	47	100
Alberta	70	110	64	22	42
Canada, Total	335	350	163	87	182

(Yield, Pounds Per Acre)

Manitoba	800	750	630	800	900
Saskatchewan	800	750	658	894	1,050
Alberta	714	727	719	973	810
Canada, Total	782	743	678	894	962

(Production-Metric Tons)

Manitoba	14,515	13,608	6,578	6,531	16,329
Saskatchewan	81,647	68,039	22,679	19,051	47,627
Alberta	22,679	36,287	20,865	9,707	15,422
Canada, Total	118,842	117,935	50,121	35,289	79,378

SOURCE: Statistics Canada, Catalogue No. 22-002.



TABLE 30CANADIAN EXPORTS OF MUSTARDSEED

(Metric Tons)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Australia	--	65	--	--	22
Belgium-Luxembourg	8,035	6,292	114	574	435
Brazil	<u>1/</u>	93	--	--	--
Chile	--	4	--	--	--
Costa Rica	--	4	15	17	--
Czechoslovakia	--	--	108	35	--
El Salvador	4	--	--	--	--
France	--	129	290	181	--
Germany, West	11,459	2,165	3,483	2,613	2,157
Guatemala	--	1	--	--	--
Israel	25	--	3	--	--
Japan	6,149	7,565	9,058	7,517	7,024
Mexico	177	281	272	108	196
Netherlands	10,791	18,048	11,057	9,114	14,138
New Zealand	--	1	--	--	--
Philippines	--	--	4	4	7
South Africa	--	--	--	--	21
Spain	--	--	17	40	--
Sweden	--	54	54	54	--
Switzerland	684	94	430	--	1,108
United Kingdom	36	637	1,253	85	18
United States	34,052	33,460	31,659	38,526	31,312
U.S.S.R.	24	--	--	--	--
Venezuela	1	22	24	--	--
TOTAL	<u>71,441</u>	<u>68,925</u>	<u>57,841</u>	<u>58,871</u>	<u>56,438</u>
TOTAL VALUE (\$'000)	<u>13,812</u>	<u>21,171</u>	<u>22,939</u>	<u>20,946</u>	<u>19,660</u>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-004.

TABLE 31CANADIAN IMPORTS OF GROUND MUSTARD

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
France	--	--	4	--	9
Germany, West	4	1/	2	--	--
Hong Kong	1	1/	1/	--	1/
India	--	--	1/	--	--
Japan	1	1/	1/	--	--
People's Republic of China	--	3	--	--	--
Taiwan	--	--	2	--	--
United Kingdom	271	306	317	169	241
United States	41	56	65	99	98
TOTAL	319	368	393	269	349
TOTAL VALUE (\$'000)	407	424	522	358	548

1/ Less than one metric ton.

SOURCE: Statistics Canada, Catalogue No. 65-007.

CHAPTER 8OTHER OILSEED CAKE AND MEAL

Canadian imports of other oilseed cake and meal regained the level of years prior to 1976 with an increase of 44.1 per cent in 1977 as compared to 1976 (Table 32). Cottonseed meal imports accounted for the increase in spite of a price increase from \$117. per tonne in 1976 to \$149. per tonne in 1977.

Exports of oilseed cakes and meals (NES) dropped by 36.5 per cent in 1977 as compared to 1976 (Table 33). The sole buyer remains the United States, and total exports are still at an insignificant level with a total of 732 tonnes.

TABLE 32CANADIAN IMPORTS OF MISCELLANEOUS OILSEED CAKE AND MEALS

(Metric Tons)

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Cottonseed Meal	1,228	307	317	27	1,001
Oilseed Cake & Meal (NES)	<u>1,411</u>	<u>3,303</u>	<u>2,317</u>	<u>1,732</u>	<u>1,535</u>
TOTAL	<u>2,639</u>	<u>3,610</u>	<u>2,634</u>	<u>1,759</u>	<u>2,536</u>
TOTAL VALUE (\$'000)	<u>506</u>	<u>598</u>	<u>390</u>	<u>206</u>	<u>379</u>

SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 33

CANADIAN EXPORTS OF OILSEED CAKES AND MEALS (NES)  
(Metric Tons)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Barbados	--	--	--	--	--
Belgium-Luxembourg	54	--	--	--	--
Bermuda	29	--	--	--	--
France	1,887	--	--	--	--
Germany, West	36	--	--	--	--
Italy	9,353	--	--	--	--
Japan	70,725	--	--	--	--
Netherlands-Antilles	9,334	--	--	--	--
Norway	18	--	--	--	--
St. Pierre-Miquelon	--	--	4	--	--
United Kingdom	547	--	--	--	--
United States	20,590	--	--	1,150	732
TOTAL	112,575	--	4	1,150	732
TOTAL VALUE (\$'000)	6,706	--	1	114	103

SOURCE: Statistics Canada, Catalogue No. 65-004.



## CHAPTER 9

### DEODORIZED FATS AND OILS

Canadian production of deodorized fats and oils continues to increase with a gain of 2.9 per cent in 1977 over 1976. Vegetable oils have maintained their share at 90.0 per cent of the total fats and oils utilized in the manufacture of shortenings, margarines and salad oils. The relative production of shortening, margarine and salad oils as a percentage of the total has remained fairly constant with shortening 44.1 per cent; margarine 28.4 per cent and salad oil at 27.4 per cent (Table 34).

Imports of vegetable oils and fats (NES) dropped by 28 per cent in 1977 over 1976 and have reached the lowest figure since 1973 (Table 35). These imports come from a wide variety of countries with the United Kingdom and the United States making up the bulk at 89.9 per cent.

Canadian imports of cocoa butter decreased slightly in 1977 (Table 36). Brazilian shipments dropped back to 1975 levels while United Kingdom exports rose from 1,409 tonnes to 1,714 tonnes. It is interesting to note the huge increase in price to \$5,091.62 per tonne in 1977 from \$3,337.46 per tonne in 1976.

For the first time in five years importation of coconut oil dropped by 18.3 per cent from 1976 to 1977 (Table 37). Imports from Sri Lanka dropped from 8,190 tonnes in 1976 to 156 tonnes in 1977, while Malaysian exports rose sharply from 1,730 tonnes in 1976 to 4,664 tonnes in 1977. Although coconut oil is a specialized oil, the price of \$596. per tonne in 1977 compared to \$365. per tonne in 1976 probably accounted for the decrease in imports as it is possible in some industrial applications to replace coconut oil when price or availability becomes a factor.

Corn oil imports for 1977 decreased by 5.7 per cent compared to 1976 (Table 38). The price in 1977 was \$685. per tonne as compared with an average of \$530. per tonne in 1976. Price could have been a factor in reduced imports in spite of the ongoing statements being made with respect to the use of polyunsaturated oils in the human diet.

Cottonseed oil imports rose from 5,200 tonnes in 1976 to 5,497 tonnes in 1977 (Table 39). This occurred in spite of an increase in average price from \$550. per tonne in 1976 to \$614. per tonne in 1977.

Olive oil imports dropped somewhat in 1977 after their sharp increase in 1976 but remained much closer to the new level reached in 1976 (Table 40). Spain continues to be the major supplier. The price for olive oil dropped significantly from \$910. per tonne in 1976 to \$703. per tonne in 1977. The importation of olive oil is likely to continue at these levels due to the make-up of the Canadian population by people from those countries where olive oil has been the predominant oil.

Palm oil imports suffered their largest drop in five years from 55,001 tonnes in 1976 to 31,179 tonnes in 1977, a decrease of 43.3 per cent (Table 41). The price for palm oil predominantly from Malaysia and Indonesia rose from \$350. per tonne in 1976 to \$550. per tonne in 1977. This major price change is primarily responsible for the reductions in palm oil imports as other local oils are interchangeable with palm oil.

Palm kernel oil imports dropped substantially in 1977 as compared to 1976 by 30.5 per cent (Table 42). The average price for palm kernel oil rose sharply in 1977 to \$589. per tonne as compared to \$305. per tonne in 1976. Shipments from the United States dropped back to more normal levels while those from Malaysia and the Netherlands continue to make-up the major share of all palm kernel oil imports.

Peanut oil imports continue to indicate a stable level in spite of a sharp price increase from \$630. per tonne in 1976 to \$815. per tonne in 1977 (Table 43). The United States continues to be the major supplier of peanut oil with Brazil showing a dramatic decrease in exports to Canada in 1977 as compared to their performance in the two previous years.

Canadian exports of other vegetable oils and fats (NES) dropped dramatically by 80 per cent in 1977 as compared to 1976 (Table 44). The two major buyers in 1976 were West Germany and Saudi Arabia but their purchases have dropped back to insignificant quantities in 1977.

TABLE 34

## CANADIAN PRODUCTION OF DEODORIZED FATS AND OILS

	(Metric Tons)					1 9 7 7				
	1 9 7 6		1 9 7 7		Total	1 9 7 7		1 9 7 7		Total
VEGETABLE OILS	Margarine Oil	Shortening Oil	Salad Oil	Salad Oil		Margarine Oil	Shortening Oil	Salad Oil	Salad Oil	
Coconut	318	17,959	14		18,291	X	X	X		18,447
Corn	7,161	X	X		17,057	X	X	X		21,263
Cottonseed	2	2,668	729		3,399	X	X	X		3,301
Palm	6,877	30,353	1,140		38,370	X	24,165	X		28,904
Palm Kernel	X	X	-		6,154	X	X	X		6,052
Peanut	-	X	X		6,481	X	X	X		6,567
Rapeseed	31,844	21,451	47,228		100,523	34,919	32,683	53,392		120,994
Soybean	49,950	49,817	21,223		120,990	53,336	42,634	20,334		116,304
Sunflowerseed	X	X	X		11,163	X	X	X		10,727
Other Vegetable	X	X	-		1,488	X	X	X		650
TOTAL VEGETABLE OILS	97,064	132,712	94,140		323,916	102,778	128,971	101,460		333,209
MARINE OILS										
Herring	1,412	1,739	-		3,151	X	X	-		X
Seal	-	-	-		-	X	X	-		76
Whale	-	-	-		-	-	-	-		-
Other Marine	123	170	-		293	X	X	-		X
TOTAL MARINE OILS	1,535	1,909	-		3,444	-	-	-		76
ANIMAL FATS										
Lard	1,684	8,151	35		9,870	X	X	-		X
Oleo, All Types	-	1,297	-		1,297	-	X	-		X
Tallow, Edible	240	20,489	163		20,892	X	X	-		X
TOTAL ANIMAL FATS	1,924	29,937	198		32,059	X	X	-		X
TOTAL ALL FATS & OILS	100,523	164,558	94,338		359,419	104,971	163,375	101,460		369,806

TABLE 34 (Cont'd)

X Confidential to meet secrecy requirements of the Statistics Act.

SOURCE: Statistics Canada, Catalogue No. 32-006.

TABLE 35

## CANADIAN IMPORTS OF VEGETABLE OILS AND FATS (NES)

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Austria	6	1	10	1	2
Belgium-Luxembourg	--	18	--	--	--
Brazil	35	18	14	212	15
Denmark	10	140	146	23	23
Egypt	--	--	--	--	<u>1</u> /
France	2	2	1	13	2
Germany, West	16	72	6	6	9
Greece	--	185	545	<u>1</u> /	--
Hong Kong	22	30	31	29	47
India	--	<u>1</u> /	<u>1</u> /	6	<u>1</u> /
Israel	6	--	--	--	--
Japan	28	59	33	47	98
Lebanon	1	--	<u>1</u> /	--	--
Netherlands	--	--	64	2	1
New Zealand	--	--	--	10	--
Peoples' Republic of China	1	5	7	14	19
Singapore	--	<u>1</u> /	--	2	--
Switzerland	1	1	3	3	6
Syria	--	1	--	--	--
Taiwan	--	<u>1</u> /	<u>1</u> /	<u>1</u> /	--
United Kingdom	289	1,994	572	331	512
United States	4,077	3,441	1,521	2,452	1,528
Yugoslavia	1	--	6	<u>1</u> /	8
TOTAL	<u>4,501</u>	<u>5,973</u>	<u>2,965</u>	<u>3,156</u>	<u>2,270</u>
TOTAL VALUE (\$'000)	<u>1,597</u>	<u>7,447</u>	<u>3,129</u>	<u>3,069</u>	<u>3,111</u>

1/ Less than one metric ton.

SOURCE: Statistics Canada, Catalogue No. 65-007.



TABLE 36CANADIAN IMPORTS OF COCOA BUTTER

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Australia	--	1,019	--	--	--
Brazil	351	1,677	426	875	416
Cuba	99	--	60	92	75
Dominican Republic	145	33	--	--	--
Ecuador	--	246	--	--	180
Germany, West	99	283	37	--	170
Ghana	1,198	1,016	--	--	--
Guinea	--	25	--	--	--
Ireland	42	--	--	--	--
Ivory Coast	99	977	236	299	178
Jamaica	50	44	--	--	10
Leeward-Windward Is.	--	30	--	--	--
Mexico	22	--	184	--	--
Netherlands	2,073	98	1,521	1,612	1,453
Nigeria	841	3,173	--	--	--
Singapore	--	--	--	26	--
Trinidad-Tobago	--	10	--	--	--
United Kingdom	1,274	211	1,283	1,409	1,714
United States	295	4,241	613	603	636
TOTAL	<u>6,593</u>	<u>13,175</u>	<u>4,362</u>	<u>5,008</u>	<u>4,835</u>
TOTAL VALUE (\$'000)	<u>12,925</u>	<u>20,048</u>	<u>14,378</u>	<u>16,714</u>	<u>24,618</u>

SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 37

CANADIAN IMPORTS OF COCONUT OIL

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Australia	661	993	2,218	<u>1/</u>	<u>1/</u>
British Oceania	46	--	--	--	--
Fiji	--	1,721	<u>1/</u>	--	--
Finland	--	--	68	--	--
Germany, West	--	1	1	--	--
Hong Kong	--	--	--	<u>1/</u>	--
Indonesia	--	--	--	173	--
Jamaica	<u>1/</u>	--	--	2	3
Leeward-Windward Is.	1	--	--	--	--
Malaysia	6,744	7,907	3,902	1,730	4,664
Netherlands	1,322	--	--	--	--
Norway	--	<u>1/</u>	--	--	--
Philippines	8,490	67	7,137	18,623	18,827
Puerto Rico	3	18	--	--	--
Singapore	4	5	--	--	--
Sri Lanka	1,728	8,096	10,540	8,190	156
United Kingdom	370	719	346	174	1
United States	1,922	2,423	1,600	752	567
TOTAL	<u>21,297</u>	<u>21,956</u>	<u>25,816</u>	<u>29,647</u>	<u>24,218</u>
TOTAL VALUE (\$'000)	<u>7,643</u>	<u>20,934</u>	<u>11,995</u>	<u>10,847</u>	<u>14,447</u>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 38

CANADIAN IMPORTS OF CORN OIL  
(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
France	--	<u>1/</u>	<u>1/</u>	--	--
Germany, West	309	--	--	--	--
United Kingdom	1,067	1,605	--	--	--
United States	<u>5,226</u>	<u>8,752</u>	<u>10,172</u>	<u>16,418</u>	<u>15,482</u>
TOTAL	<u>6,603</u>	<u>10,358</u>	<u>10,173</u>	<u>16,418</u>	<u>15,482</u>
TOTAL VALUE (\$'000)	<u>3,291</u>	<u>9,010</u>	<u>7,311</u>	<u>8,705</u>	<u>10,612</u>

1/ Less than one metric ton.

SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 39CANADIAN IMPORTS OF COTTONSEED OIL

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
United Kingdom	--	<u>1/</u>	--	--	--
United States	<u>8,402</u>	<u>11,333</u>	<u>11,289</u>	<u>5,200</u>	<u>5,497</u>
TOTAL	<u>8,402</u>	<u>11,334</u>	<u>11,289</u>	<u>5,200</u>	<u>5,497</u>
TOTAL VALUE (\$'000)	<u>3,102</u>	<u>8,214</u>	<u>7,647</u>	<u>2,863</u>	<u>3,376</u>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 40

CANADIAN IMPORTS OF OLIVE OIL  
(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Chile	--	--	--	25	--
France	30	38	30	28	15
Greece	130	105	417	162	107
Italy	698	773	611	525	737
Portugal	273	241	150	106	155
Spain	899	1,170	709	2,132	3,750
Sweden	--	8	--	--	--
Switzerland	--	--	17	--	--
Tunisia	--	--	22	--	--
Turkey	--	1	1	--	14
United States	54	66	29	2,117	62
TOTAL	<u>2,086</u>	<u>2,408</u>	<u>1,986</u>	<u>5,096</u>	<u>4,840</u>
TOTAL VALUE (\$'000)	<u>2,795</u>	<u>4,597</u>	<u>4,161</u>	<u>4,646</u>	<u>3,406</u>

SOURCE: Statistics Canada, Catalogue No. 65-007.



Table 41Canadian Imports of Palm Oil

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Germany, West	3	1	--	--	--
Ghana	--	--	--	--	3
India	--	--	--	<u>1/</u>	--
Indonesia	--	2,011	13,085	20,592	15,249
Ivory Coast	--	--	1,385	--	--
Malaysia	19,558	10,503	23,675	31,800	13,972
Netherlands	--	--	--	--	8
Philippines	--	--	--	250	--
Singapore	--	1,020	509	1	--
United Kingdom	<u>1/</u>	3	<u>1/</u>	2	6
United States	<u>16</u>	<u>2,658</u>	<u>2,627</u>	<u>2,354</u>	<u>1,941</u>
TOTAL	<u>19,578</u>	<u>16,129</u>	<u>41,283</u>	<u>55,001</u>	<u>31,179</u>
TOTAL VALUE (\$'000)	<u>4,560</u>	<u>10,671</u>	<u>19,547</u>	<u>19,285</u>	<u>17,142</u>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 42

CANADIAN IMPORTS OF PALM KERNEL OIL

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Denmark	--	--	--	--	7
Hong Kong	--	200	--	--	--
Indonesia	--	--	473	2,223	3,905
Malaysia	4,474	2,970	3,966	4,685	2,941
Netherlands	142	78	13	10	--
Nigeria	975	--	--	--	--
Singapore	--	--	--	44	--
United States	351	1,126	640	3,388	339
TOTAL	<u>5,943</u>	<u>4,376</u>	<u>5,092</u>	<u>10,351</u>	<u>7,192</u>
TOTAL VALUE (\$'000)	<u>2,160</u>	<u>4,459</u>	<u>2,565</u>	<u>3,174</u>	<u>4,236</u>

SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 43

CANADIAN IMPORTS OF PEANUT OIL  
(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Brazil	--	--	2,444	3,602	604
France	--	--	18	--	--
Hong Kong	94	190	97	52	40
Japan	--	--	5	--	--
Nicaragua	--	--	--	693	--
Nigeria	2,155	--	--	--	--
Senegal	--	--	507	--	--
United Kingdom	--	519	680	<u>1/</u>	<u>1/</u>
United States	<u>5,132</u>	<u>4,808</u>	<u>3,095</u>	<u>2,381</u>	<u>6,201</u>
TOTAL	<u>7,382</u>	<u>5,519</u>	<u>6,846</u>	<u>6,734</u>	<u>6,845</u>
TOTAL VALUE (\$'000)	<u>3,769</u>	<u>5,031</u>	<u>5,950</u>	<u>4,252</u>	<u>5,582</u>

1/ Less than one metric ton.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 44

CANADIAN EXPORTS OF OTHER VEGETABLE OILS AND FATS (NES)<sup>1/</sup>

(Metric Tons)

DESTINATION	1973	1974	1975	1976	1977
Australia	--	--	2/	--	2/
Bahamas	5	--	--	4	2
Barbados	28	43	10	13	46
Bermuda	20	2	--	--	--
British Honduras	1	--	--	--	--
Colombia	--	--	--	443	--
Cuba	14	1	183	4	3
Cyprus	--	--	2/	--	--
Emirates, UA	--	--	--	13	--
Germany, West	--	1	2/	2,205	3
Greenland	1/	--	--	--	--
Guyana	26	154	6	2	4
Haiti	--	--	111	--	--
Honduras	6	--	--	--	--
Hong Kong	419	--	--	--	--
India	--	--	--	5	--
Ivory Coast	--	--	--	--	1
Jamaica	6	1	1	--	--
Jordan	--	--	--	5	--
Kenya	2	1/	--	--	--
Kuwait	--	11	--	--	--
Leeward-Windward Is.	31	9	63	45	100
Mexico	9	--	--	--	--
Netherlands	--	--	--	--	57
Peru	--	--	--	--	66
Saudi Arabia	--	--	99	3,156	32
South Africa	--	2/	2/	--	--
St. Pierre-Miquelon	1	2/	--	--	1
Sweden	--	--	--	17	18
Taiwan	--	--	--	2/	--
Trinidad-Tobago	133	159	29	120	159
United Kingdom	12,100	--	71	125	66
United States	445	375	364	811	855
TOTAL	13,249	763	944	6,974	1,413
TOTAL VALUE (\$'000)	1,238	513	512	1,914	918

TABLE 44 (Cont'd)FOOTNOTES TOCANADIAN EXPORTS OF OTHER VEGETABLE OILS AND FATS (NES)<sup>1/</sup>

1/ This export class No. 393-99 includes sunflower oil, salad & cooking oil and certain specialty fats like pan greases. Prior to 1973 it included rapeseed oil.

2/ Less than one metric ton.

SOURCE: Statistics Canada, Catalogue No. 65-004.

CHAPTER 10SPECIFIED FATS AND OILS

The trend established in margarine production in previous years continued in 1977, when domestic production increased by some 10 thousand metric tons over the previous year. The sharp decline in butter production reflects both the replacement of butter by margarine and also the increased usage of butter fat in cheese and concentrated whole milk products (Table 51).

Canadian imports of margarine and shortening (Table 46) declined substantially during the year, possibly indicating a shift to self sufficiency in the domestic industry, as the drop in imports is markedly greater than the reduction in exports of these commodities (Table 47).

Shortening production appears to have stabilized, while that of salad oils continues its growth pattern exhibited in previous years. It should be noted, however, that imports of vegetable cooking fats and packaged salad oils (Table 48) climbed, reversing the trend exhibited in 1976. However, these imports were still appreciably lower than those of 1975.

Of chief interest in the production, import and export of fats and oils of animal origin (Tables 45, 49 and 50) are the reduction in imports of these items, and also the massive increase in the exports of tallow, oils and fats (NES). Study of this latter table indicates that there have again been substantial shifts in the importance of the markets for these products in many of Canada's trading partners. These changes indicate the variations in both demand and relative market value in the various countries.

Animal oil and fat production in Canada in 1978 should reflect the expected increase in hog slaughter and the decrease in cattle slaughter forecast for the industry.



TABLE 45

CANADIAN PRODUCTION OF SPECIFIED FATS AND OILS PRODUCTS

(Thousands of Metric Tons)

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Margarine <sup>1/</sup> <sub>-</sub>	98	108	119	126	136
Butter <sup>2/</sup> <sub>-</sub>	98	108	131	117	94
<u>SHORTENING</u>					
Packaged <sup>3/</sup> <sub>-</sub>	17	17	23	90	90
Bulk <sup>4/</sup> <sub>-</sub>	163	154	148	81	81
<u>REFINED OILS</u>					
Salad <sup>5/</sup> <sub>-</sub>	69	77	81	95	101
Lard <sup>6/</sup> <sub>-</sub>	50	50	43	42	40
<u>TALLOW</u> <sup>7/</sup> <sub>-</sub>					
Edible	18	16	17	16	13
Inedible	184	182	182	199	180

1/ Includes retail and commercial packages. Commercial sales (21-450 pound) packages account for about 5% of total output.

2/ Includes factory and whey butter.

3/ Retail packages up to 20 pounds only.

4/ Covers commercial (21-450 pound) packages, bulk and other than packaged retail sales of manufacturers of shortening and deodorized shortening oil. Includes baking and frying fats and oils.

5/ Covers packaged and bulk manufacturers' sales.

6/ Rendered lard includes shipments of processed lard in retail and commercial packages and bulk sales.

7/ Shipments for year.

TABLE 46CANADIAN IMPORTS OF MARGARINE AND SHORTENING

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Denmark	1	--	--	--	--
France	--	--	--	--	2
Germany, West	1	9	1	4	3
Greece	3	--	--	15	--
India	--	--	--	1	--
Netherlands	--	--	--	2	--
St. Pierre-Miquelon	--	--	--	22	--
Sweden	39	69	5	55	44
United Kingdom	--	--	--	<u>1/</u>	--
United States	<u>4,314</u>	<u>11,903</u>	<u>15,695</u>	<u>16,221</u>	<u>14,040</u>
TOTAL	<u>4,360</u>	<u>11,983</u>	<u>15,701</u>	<u>16,322</u>	<u>14,089</u>
TOTAL VALUE (\$'000)	<u>1,743</u>	<u>9,005</u>	<u>11,399</u>	<u>8,967</u>	<u>9,921</u>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 47CANADIAN EXPORTS OF MARGARINE, SHORTENING AND LARD

(Metric Tons)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Bahamas	--	--	1	--	--
Bahrain	--	--	--	17	--
Barbados	39	--	--	--	--
Bermuda	22	22	14	16	15
Emirates, UA	--	--	--	48	64
Germany, West	--	--	1	--	2
Greenland	3	--	--	--	--
Jamaica	4	30	22	35	4
Japan	--	18	--	--	--
Jordan	--	--	--	18	16
Kuwait	--	--	--	67	46
Lebanon	--	--	--	--	190
Leeward-Windward Is.	<u>1/</u>	<u>1/</u>	3	--	19
Libya	--	--	--	7	--
Netherlands-Antilles	3	1	--	--	32
Qatar	--	--	--	15	11
Saudi Arabia	--	--	--	405	64
St. Pierre-Miquelon	50	44	42	25	41
Trinidad-Tobago	--	--	<u>1/</u>	--	1
United States	22	234	182	49	122
Yemen	<u>1/</u>	--	--	--	--
TOTAL	<u>144</u>	<u>352</u>	<u>268</u>	<u>706</u>	<u>634</u>
TOTAL VALUE (\$'000)	<u>100</u>	<u>290</u>	<u>248</u>	<u>543</u>	<u>770</u>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 48

CANADIAN IMPORTS OF VEGETABLE COOKING FATS  
AND PACKAGED SALAD OILS

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Denmark	-	2	-	-	-
France	-	17	12	-	1
Greece	8	18	15	-	12
Hong Kong	1	-	-	<u>1/</u>	1
Israel	-	1,000	-	<u>1/</u>	-
Sweden	26	18	14	5	1
United Kingdom	285	16	57	3	4
United States	<u>709</u>	<u>386</u>	<u>594</u>	<u>135</u>	<u>404</u>
TOTAL	<u>1,030</u>	<u>1,461</u>	<u>692</u>	<u>144</u>	<u>423</u>
TOTAL VALUE (\$'000)	<u>636</u>	<u>471</u>	<u>389</u>	<u>109</u>	<u>342</u>

1/ Less than one metric ton.

SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 49

CANADIAN IMPORTS OF LARD, TALLOW, ANIMAL OILS AND FATS

(Metric Tons)

L A R D

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Australia	1	9	--	7	--
France	--	--	--	--	1
Norway	--	--	1/ -	--	--
United States	7,158	17,671	12,118	19,239	17,840
TOTAL	7,160	17,680	12,119	19,246	17,841
TOTAL VALUE (\$'000)	2,531	12,306	8,276	8,000	9,051

TALLOW, ANIMAL OILS AND FATS (NES)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Australia	22	3	11	5	--
Germany, West	1	--	10	--	6
Netherlands	--	--	--	1	--
New Zealand	--	--	--	10	--
United Kingdom	1	--	--	--	--
United States	3,229	4,314	2,134	1,467	1,152
TOTAL	3,253	4,318	2,155	1,485	1,158
TOTAL VALUE (\$'000)	1,226	1,803	768	639	556

1/ Less than one metric ton.

SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 50

## CANADIAN EXPORTS OF TALLOW, ANIMAL OILS AND FATS (NES)

(Metric Tons)

DESTINATION	1973	1974	1975	1976	1977
Bangladesh	--	--	--	--	99
Barbados	23	90	27	21	--
Belgium-Luxembourg	1,193	598	996	2,022	798
Bermuda	--	--	--	1	--
Brazil	--	97	--	--	--
Chile	--	--	--	--	249
Colombia	--	--	52	32	22
Cuba	4,904	13,638	13,587	10,702	5,600
Dominican Republic	--	18	--	--	--
France	949	1,002	5	10	2,362
Germany, West	1,470	--	300	3,857	2,112
Ghana	--	596	749	--	--
Guatemala	--	32	21	--	517
Guyana	--	--	136	--	--
Hong Kong	--	--	--	--	2
Iran	--	--	--	1,300	--
Ireland	--	--	300	--	--
Italy	--	--	548	1,413	--
Ivory Coast	--	--	--	--	496
Jamaica	28	233	299	474	338
Japan	19,460	15,376	10,400	18,058	25,111
Kenya	--	--	--	50	110
Korea, South	985	5,272	15,700	13,190	26,269
Leeward-Windward Is.	59	4	--	4	1
Malaysia	--	--	73	56	146
Mexico	--	16	25	20	44
Morocco	--	--	574	--	--
Netherlands	6,709	24,184	16,697	29,977	38,195
Netherlands-Antilles	--	3	--	--	--
Nigeria	--	--	924	1,319	--
Norway	297	16	71	--	--
Panama	--	--	--	4	--
People's Republic of China	9,948	11,112	5,589	2,933	8,630
Portugal	--	--	52	157	145
Puerto Rico	--	17	--	--	--
Senegal	--	997	708	--	--
Singapore	--	30	158	18	51
Spain	936	1,550	9,656	7,390	9,343
St. Pierre-Miquelon	1/	1/	--	--	3
Switzerland	93	150	209	272	169



TABLE 50 (Cont'd)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Taiwan	--	--	--	1,680	2,900
Trinidad-Tobago	588	326	294	503	486
United Kingdom	22,140	13,803	5,541	9,778	18,064
United States	16,221	10,885	11,044	9,651	4,456
U.S.S.R.	--	--	3,774	--	--
Venezuela	18	193	69	66	1,132
Zaire	--	--	747	--	--
Zambia	--	1,203	--	--	--
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	87,042	101,458	99,335	113,166	140,829
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	24,407	41,253	32,218	38,589	54,856
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1/ Less than one metric ton.

SOURCE: Statistics Canada, Catalogue No. 65-004.

TABLE 51

CANADIAN TRENDS IN BUTTERFAT PRODUCTION AND UTILIZATION

(Thousands of Metric Tons)

Year	Total Milk Production		Butterfat Utilization			
	Whole Milk	Butterfat Equivalent <sup>1/</sup>	Manufactured Dairy Products <sup>2/</sup>	Fluid Milk Sales <sup>3/</sup>	Farm Home Consumed	Fed on Farms
1968	8,329	291	180	81	13	10
1969	8,487	297	188	80	13	10
1970	8,306	290	181	82	12	10
1971	8,062	282	170	83	11	10
1972	8,032	281	172	86	7	10
1973	7,659	268	154	87	7	11
1974	7,561	264	152	89	6	11
1975	8,017 <sup>6/</sup>	280	169	87 <sup>6/</sup>	5	12
1976	7,685	269	157	84	5	17
1977	7,743	271	165	85	5	14

BUTTERFAT UTILIZATION IN MANUFACTURED DAIRY PRODUCTS

Year	Total	Creamery Butter	Cheese <sup>4/</sup>	Concentrated Whole Milk Products	Ice-Cream Mix
1968	180	123	34	12	11
1969	188	129	35	24	<sup>5/</sup>
1970	181	121	37	23	<sup>5/</sup>
1971	170	106	38	10	16
1972	172	108	38	10	16
1973	154	92	38	10	14
1974	152	85	44	9	14
1975	169	104	41	9	15
1976	157	92	42	8	15
1977	165	91	46	12	16

TABLE 51 (Cont'd)FOOTNOTES TOCANADIAN TRENDS IN BUTTERFAT PRODUCTION AND UTILIZATION

- 1/ Fat content of milk based on conversion factor of 3.5%.
- 2/ Includes creamery butter, cheddar cheese (bulk of all Canadian cheese production), other cheese, concentrated whole milk products, ice-cream mix.
- 3/ Fluid milk sales represent whole milk sales from farms for use in milk and cream.
- 4/ Includes mainly cheddar cheese and other factory cheese made from whole milk and cream. Excludes creamed cottage cheese.
- 5/ Included with concentrated whole milk products.
- 6/ Revised figure.

SOURCE: Based on unpublished Statistics Canada data.

## CHAPTER 11

### MARINE AND FISH OILS AND MEALS

#### World Fish Meal Supply

World fish meal production dropped from 4.9 million tons in 1976 to 4.4 million tons in 1977. This decline was due principally to the reduced production of Peruvian anchovy meals, which declined from 857,000 to 400,000 tons. There were lesser declines registered in the relatively large outputs of Japan, South Africa and the United States. Icelandic production increased about 50 per cent. Due to good catches of capelin, Norway and Denmark maintained production at the 1976 level. The largest producer of fish meal in 1977 was Japan (700,000 tons), followed by the Soviet Union (630,000 tons) and Norway (470,000 tons). Canadian output of fish meal in 1977 was 45,813 tons.

#### Prices

During 1977 fish meal prices stabilized at a high level compared to the increasing trend of prices in 1976. Quotations for 65 per cent fish meal in bulk shipments c.i.f. European ports ranged seasonally between \$350 and \$460 per ton. The upward pressure on fish meal prices as a result of low 1977 production was effectively checked by the moderate prices of competing products.

#### Outlook

Owing to resource constraints in Peru and South Africa, world supplies are expected to remain tight. Resources should hold at 1977 levels in the United States, Iceland, Norway and Chile. Danish production will fall significantly as a result of extended jurisdiction and conservation measures. There should be a marginal increase in Canadian production of groundfish meal.

#### World Fish Oil Supply

Most fish oil countries produced less oil in 1977 than in 1976, Iceland being the significant exception. The low oil content of capelin was the cause of diminution in Norway and Denmark. Catches of pilchard fell in South Africa and Peru did not produce enough fish oil to meet domestic demand. The United States not only had a reduced catch of menhaden, but also the fish were smaller with low oil content. The world production declined to 900,000 tons in 1977, from just over one million tons.

The European market, which accounts for 90 per cent of world trade, was characterized by limited supplies and high prices, even higher than soybean oil at the close of 1977. This situation is expected to prevail throughout 1978.

### Trends in the Fish Reduction Industry

Whereas the latter half of the 1960's was characterized by the rapid growth and development of the Atlantic Coast Fish Meal and Marine Oil industry, the 1970's have, on the other hand, witnessed the peaking and subsequent reversal of this trend. Landings of herring on which this growth phase was based have declined since 1968-70 when landings reached a plateau in excess of 1 million tons, to less than 300,000 tons in each of the past three years. In addition to the decline in the herring catch per se there has been a progressive diversion of landings into the production of food products, in response to the emergence of a market for Canadian food herring in Europe and Japan which has further reduced the raw material available to the reduction industry.

Given the growing importance that is being placed on utilization of herring for direct food production relative to reduction, it is difficult to visualize any reversal in the current declining trend in landings of herring for reduction into meal and oil. It is too early to assess the benefits on herring stocks, particularly on the east coast from the proposed establishment by Canada of a 200-mile economic fishing zone. However, any increase in supplies are likely to be gradual and it is expected that every effort will be made towards utilizing herring for food.

### Marine Oil

In 1977, the total output of marine oil in Canada was 6,635 tons (Table 52), as against 10,658 in 1975 and over 36,000 tons in 1970. This decline was primarily attributable to the decline in the production of herring oil which fell by some 75 per cent over the period. Although groundfish body and offal oil has declined about 72 per cent since 1973 to 3,106 tons in 1977, it has become the major source of fish oil.

### Fish Meal

The Canadian production of fish meal in 1977 was 45,813 tons, a decrease of over 10,000 tons over 1975 (Table 55). This was largely attributable to an increase in groundfish reduction of over 20 per cent above the level of 1974 and 1975 to 33,342 tons in 1976. This upward trend is expected to continue and to increase sharply in the 1980's as a result of larger Canadian catches on the Atlantic Coast as a consequence of the extended fishing zone.

The scope for utilization of the herring resource - which historically has provided the main source of raw material for reduction - is now severely circumscribed; Pacific herring may now be harvested for food purposes only, and the raw material available to the reduction industry is consequently confined to that portion of the catch not suitable for conversion to food products. Herring meal production has declined from 16,484 tons in 1974 to 13,047 tons in 1976, but the latter production level could be maintained over the next few years.



TABLE 52

## CANADIAN PRODUCTION OF MARINE OILS BY TYPES AND AREAS

(Metric Tons)

<u>ATLANTIC COAST</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977<sup>1/</sup></u>
Body or Offal Oil:					
Groundfish	11,039	7,222	4,543	3,883	3,106
Herring	15,022	13,936	5,517	3,599	1,925
Other <sup>2/</sup>	394	755	18	54	387
Liver Oil:					
Groundfish	419	226	279	52	454
Seal Oil:	--	--	1,486	661	486
ATLANTIC TOTAL	<u>26,874</u>	<u>22,139</u>	<u>11,843</u>	<u>8,249</u>	<u>6,358</u>
<u>PACIFIC COAST</u>					
Body or Offal Oil:					
Herring	1,105	585	x <sup>3/</sup>	x <sup>3/</sup>	x <sup>3/</sup>
Salmon	802	415	x <sup>3/</sup>	x <sup>3/</sup>	x <sup>3/</sup>
Other	217	100	x <sup>3/</sup>	x <sup>3/</sup>	x <sup>3/</sup>
PACIFIC TOTAL	<u>2,124</u>	<u>1,100</u>	<u>1,429</u>	<u>2,409<sup>5/</sup></u>	<u>277</u>
CANADA TOTAL	<u>28,998</u>	<u>23,239</u>	<u>13,272</u>	<u>10,658<sup>5/</sup></u>	<u>6,635</u>

<sup>1/</sup> Preliminary.<sup>2/</sup> Primarily whale oil.<sup>3/</sup> Confidential - to meet secrecy requirements of the Statistics Act.<sup>4/</sup> Estimate.<sup>5/</sup> Revised figure.SOURCE: Based on Environment Canada data.

TABLE 53CANADIAN IMPORTS OF FISH AND MARINE OILS (NES)

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Denmark	6	<u>1/</u>	1	<u>1/</u>	--
France	--	<u>1/</u>	--	--	--
Germany, West	--	<u>1/</u>	--	4	--
Japan	6	89	--	9	9
Netherlands	--	--	--	6	--
Norway	134	179	629	150	3
South Africa	89	92	--	--	--
United Kingdom	323	165	49	28	5
United States	<u>676</u>	<u>322</u>	<u>199</u>	<u>99</u>	<u>393</u>
TOTAL	<u>1,237</u>	<u>849</u>	<u>878</u>	<u>299</u>	<u>410</u>
TOTAL VALUE (\$'000)	<u>424</u>	<u>467</u>	<u>500</u>	<u>233</u>	<u>263</u>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 54CANADIAN EXPORTS OF MARINE OILS BY TYPES

(Metric Tons)

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Cod Liver Oil, Sun Rotted	1,270	1,043	868	1,381	915
Herring Oil	2,812	5,488	2,277	5,315	4,124
Whale Oil	1,224	--	--	5	14
Fish & Marine Animal Oil NES	<u>2,676</u>	<u>2,313</u>	<u>1,746</u>	<u>3,408</u>	<u>10,987</u>
TOTAL	<u>7,983</u>	<u>8,845</u>	<u>4,891</u>	<u>10,110</u>	<u>16,040</u>
TOTAL VALUE (\$'000)	<u>1,795</u>	<u>3,763</u>	<u>1,837</u>	<u>2,968</u>	<u>3,950</u>

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 55

CANADIAN PRODUCTION OF FISH MEALS BY TYPES AND AREAS  
(Metric Tons)

<u>ATLANTIC COAST</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u> <sup>1/</sup>
Groundfish	34,485	26,700	25,708	33,342	33,606
Herring	13,650	16,484	14,327	13,047	6,789
Other	1,721	2,321	589	4,387	4,136
ATLANTIC TOTAL	<u>49,856</u>	<u>45,505</u>	<u>40,624</u>	<u>50,776</u>	<u>44,531</u>
<u>PACIFIC COAST</u>					
Herring	4,278	4,711	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>
Salmon	1,561	887	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>
Other	592	554	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>
PACIFIC TOTAL	<u>6,431</u>	<u>6,152</u>	<u>6,540</u>	<u>10,013</u> <sup>4/</sup>	<u>1,282</u> <sup>3/</sup>
CANADA TOTAL	<u>56,287</u>	<u>51,657</u>	<u>47,164</u>	<u>60,789</u> <sup>4/</sup>	<u>45,813</u> <sup>3/</sup>

<sup>1/</sup> Preliminary

<sup>2/</sup> Confidential - to meet secrecy requirements of the Statistics Canada Act.

<sup>3/</sup> Estimate

<sup>4/</sup> Revised figure

SOURCE: Based on Environment Canada data.

TABLE 56CANADIAN IMPORTS OF FISH MEAL

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Cuba	--	--	--	163	--
Denmark	--	10	--	--	--
France	--	--	5 <sup>a</sup>	--	--
Germany, West	--	<u>1</u> /	--	229	--
Japan	--	--	2	--	--
Peru	21	--	--	--	--
Puerto Rico	81	--	41	40	--
Taiwan	--	--	--	--	13
United Kingdom	--	2	--	7	--
United States	379	245	209	521	451
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	482	261	311	962	464
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	121	83	87	309	153
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 57

CANADIAN EXPORTS OF FISH MEAL AND CONDENSED SOLUBLES

(Metric Tons)

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1976</u>
Herring Meal and Pilchard Meal	12,997	16,281	14,733	14,972	11,181
Fish Meal NES	16,386	18,393	9,515	17,000	16,445
Fish Condensed Homogenized Solubles	185	-	43	941	307
TOTAL (Meal Only)	<u>29,568</u>	<u>34,678</u>	<u>24,291</u>	<u>32,913</u>	<u>27,933</u>
TOTAL VALUE (Meal Only) (\$'000)	<u>11,023</u>	<u>12,160</u>	<u>6,071</u>	<u>9,422</u>	<u>11,367</u>

SOURCE: Statistics Canada, Catalogue No. 65-004.



## CHAPTER 12

### THE CANADIAN FLAXSEED SITUATION

#### Canadian Flaxseed Production

Flaxseed production declined in 1977 mainly due to competition from alternative crops. There are two main flaxseed processors involved in crushing a portion of the crop. The main portion is exported in seed form.

#### Canadian Exports of Flaxseed

Exports in 1977 increased to 332,708 tonnes from 195,107 in 1976. This represented a drawdown in stocks. Main markets are the EEC, Spain, Japan and the United States.

#### Canadian Exports of Linseed Oil and Meal

Small quantities of these products were exported in 1977. The EEC absorbed 5,682 tonnes out of total exports of 5,717 tonnes valued at \$2,786,000.

TABLE 58

CANADIAN SUPPLY AND DISPOSITION OF FLAXSEED,LINSEED OIL AND LINSEED MEAL

(Crop Year)

	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>
--	----------------	----------------	----------------	----------------	----------------

(Metric Tons)

FLAXSEED

Stocks, Starting <sup>1/</sup>	407,234	194,904	200,950	218,578	380,640
Production	447,495	492,786	350,538	444,523	276,875
Imports	76	431	406	-	<u>3/</u>
Exports	498,882	393,797	267,196	195,107	332,708
Domestic Crushing	66,881	19,355	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>

LINSEED OIL

Exports	10,588	2,230	2,184	5,817	4,525
Domestic Production	22,762	6,601	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>

LINSEED MEAL

Exports	12,735	24	196	636	3,679
Domestic Production	42,037	11,932	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>

<sup>1/</sup> Total Stocks in all positions.

<sup>2/</sup> Confidential - to meet secrecy requirements of the Statistics Act.

<sup>3/</sup> Less than one metric ton.

SOURCE: Statistics Canada, Catalogue No. 22-006.

TABLE 59CANADIAN IMPORTS OF FLAXSEED

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
United Kingdom	--	--	--	--	18
United States	<u>86</u>	<u>451</u>	<u>337</u>	<u>1/</u>	<u>51</u>
TOTAL	<u>86</u>	<u>451</u>	<u>337</u>	<u>1/</u>	<u>69</u>
TOTAL VALUE (\$'000)	<u>25</u>	<u>333</u>	<u>171</u>	<u>--</u>	<u>45</u>

1/ Less than one metric ton.

SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 60CANADIAN EXPORTS OF FLAXSEED

(Metric Tons)

<u>DESTINATION</u>	<u>1 9 7 3</u>	<u>1 9 7 4</u>	<u>1 9 7 5</u>	<u>1 9 7 6</u>	<u>1 9 7 7</u>
Australia	--	5,633	--	--	--
Austria	--	--	34	36	--
Belgium-Luxembourg	11,886	7,477	2,951	1,763	11,658
Czechoslovakia	15,826	25,004	17,717	3,151	5,836
Denmark	2,062	--	---	--	614
Finland	--	--	--	--	6
France	7,772	5,202	1,848	508	6,722
Germany, East	--	3,860	--	--	--
Germany, West	117,865	110,680	77,619	81,224	117,479
Greece	1,371	2,184	1,050	1,500	--
Italy	12,755	--	--	--	--
Japan	110,123	77,027	65,330	90,647	78,984
Korea, North	--	--	--	--	269
Korea, South	2,971	--	--	1,750	3,373
Netherlands	86,808	41,289	31,516	11,078	25,799
New Zealand	--	2,199	--	--	--
Panama	--	--	2,117	--	102
Poland	--	23,263	18,926	--	--
Spain	10,833	6,500	6,580	8,547	11,315
Sweden	--	--	72	54	2,279
Switzerland	1,906	1,237	108	1,468	9,020
Taiwan	--	--	--	--	911
Trinidad-Tobago	--	--	2	--	--
United Kingdom	49,841	31,337	15,573	4,672	13,892
United States	1,170	12,659	3,493	40,198	41,107
<b>TOTAL</b>	<b>433,200</b>	<b>351,031</b>	<b>244,942</b>	<b>246,602</b>	<b>329,366</b>
<b>TOTAL VALUE (\$'000)</b>	<b>112,984</b>	<b>148,631</b>	<b>83,815</b>	<b>66,278</b>	<b>93,538</b>

SOURCE: Statistics Canada, Catalogue No. 65-004.

TABLE 61

CANADIAN EXPORTS OF LINSEED OIL

(Metric Tons)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Belgium-Luxembourg	--	--	1,526	1,965	1,717
Bermuda	--	--	1	1	--
Ecuador	1	--	--	--	--
French West Indies	--	--	--	<u>1/</u>	--
Jamaica	--	--	<u>1/</u>	--	--
Leeward-Windward Is .	--	--	--	--	1
Liberia	--	2	2	--	--
Netherlands	--	---	1,590	2,848	1,724
Nigeria	<u>1/</u>	--	--	--	--
United Kingdom	5,962	581	398	250	2,241
United States	96	--	36	34	27
Venezuela	<u>18</u>	<u>8</u>	<u>7</u>	<u>8</u>	<u>7</u>
TOTAL	<u>6,078</u>	<u>592</u>	<u>3,562</u>	<u>5,108</u>	<u>5,717</u>
TOTAL VALUE (\$'000)	<u>2,314</u>	<u>655</u>	<u>3,237</u>	<u>2,758</u>	<u>2,786</u>

1/ Less than one metric ton.

TABLE 62CANADIAN EXPORTS OF LINSEED CAKE AND MEAL

(Metric Tons)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Belgium-Luxembourg	--	--	--	481	--
Germany, West	--	--	--	3,150	--
Leeward-Windward Is.	4	--	--	--	4
Netherlands	1,873	--	--	--	3,201
Sweden	--	--	--	22	--
Trinidad-Tobago	168	49	114	60	91
United Kingdom	2,313	--	--	--	--
United States	1,151	64	80	159	1,430
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	5,511	114	194	3,875	4,726
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	822	24	37	835	741
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-004.



TABLE 63

## QUALITY DATA FOR WESTERN CANADIAN FLAXSEED, SURVEY SAMPLES OF 1975, 1976 AND 1977 CROPS

	Oil Content <sup>1/</sup>			Iodine Value			Protein Content <sup>2/</sup>			No. of Samples		
	1975	1976	1977	1975	1976	1977	1975	1976	1977	1975	1976	1977
WESTERN CANADA												
No. 1 CW	42.1	43.0	44.2	188	192	195	42.6	41.1	40.6	246	289	215
No. 2 CW	42.2	43.8	44.4	188	193	199	42.4	43.3	39.7	33	4	40
No. 3 CW	41.4	--	44.7	188	--	201	43.8	--	40.1	11	--	27
No. 4 CW	--	--	46.2	--	--	199	--	--	40.2	--	--	5
All Grades	42.1	43.0	44.3	188	192	196	42.6	41.1	40.4	290	293	289
ALL GRADES												
Manitoba	41.7	43.0	44.5	185	192	197	42.8	41.8	40.1	135	161	156
Saskatchewan	42.1	42.9	44.2	189	192	196	42.9	39.7	40.4	103	94	118
Alberta	43.2	43.2	43.0	195	194	190	41.4	41.7	44.2	52	38	15

<sup>1/</sup> Oil Content of seed is reported on moisture-free basis.

<sup>2/</sup> Protein Content is reported on oil-free meal and moisture-free basis.

SOURCE: Canadian Grain Commission, Crop Bulletin Nos. 133 and 137.

TABLE 64

SUMMERFALLOW AND STUBBLE CULTIVATION OF FLAXSEED

<u>Seeded Area</u>	<u>Summer- fallow</u>	<u>Stubble</u>	<u>Total</u>
( '000 Acres)			
1973	776	674	1,450
1974	731	719	1,450
1975	658	742	1,400
1976	308	492	800
1977	596	824	1,420
(Per Cent)			
<u>Distribution</u>			
1973	54	46	100
1974	50	50	100
1975	47	53	100
1976	38	62	100
1977	42	58	100
(Bushels)			
<u>Average Yield Per Seeded Acre</u>			
1973	14.6	12.0	13.4
1974	10.5	8.5	9.5
1975	14.6	10.6	12.5
1976	16.2	12.0	13.6
1977	19.1	15.3	16.9
(Metric Tons)			
<u>Production</u>			
1973	287,035	205,750	492,786
1974	195,590	154,948	350,538
1975	243,852	200,670	444,523
1976	127,006	149,868	276,874
1977	289,575	320,056	609,632

SOURCE: Statistics Canada, Catalogue No. 22-002.

TABLE 65CANADIAN FLAXSEED PRICES <sup>1/</sup>

(Crop Year)

<u>M O N T H</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/7</u>
	..... Cents and Eighths Per Bushel .....				
August	305/7	878/7	1099/7	854/3	714/2
September	325/4	885/6	1172	790	717/6
October	357/7	898/6	1219/1	722/2	698/3
November	353	1018/5	1094/2	655/7	675/2
December	366/7	1060/5	1066/5	628/5	666/4
January	436/4	1122/6	922/4	657	695/5
February	535/6	1167	810/5	653/2	715/7
March	483/3	1107	784/1	646	740/4
April	478	967/3	861/3	634	846/1
May	552/6	991/6	825/6	657/7	768/7
June	701/7	979/5	779/7	713/3	557/7
July	895/6	1095/2	815/2	742/6	616/2
Yearly Average	<u>482/6</u>	<u>1014/4</u>	<u>954/2</u>	<u>696/3</u>	<u>701/1</u>

<sup>1/</sup> Winnipeg Grain Exchange No. 1 C.W. Flaxseed, Basis Thunder BaySOURCE: Statistics Canada, Catalogue No. 22-006.

## CHAPTER 13

### OTHER INEDIBLE FATS AND OILS

The products grouped in this publication are castor, tung and tall oils, tall pitch, tall oil fatty acids, chemically modified oils, fats and waxes, and derivatives of oils, fats and waxes.

Imports of castor oil in 1971 have remained identical to those in 1976 (Table 66). This is interesting as the average price of castor oil rose to \$1,024. per tonne in 1977 as compared to \$625. per tonne in 1976. For the first time the United States became the major supplier of castor oil with imports from Brazil dropping sharply.

Tung oil imports decreased a minimal amount to 699 tonnes in 1977 from 724 tonnes in 1976 (Table 67). The United States became the predominant supplier of this product. The price of tung oil showed a dramatic increase from \$900. per tonne in 1976 to \$1,961. per tonne in 1977. It is indicative of the fact that when an oil is highly specialized it is not easy to interchange with another oil and thus price is not a prohibitive factor.

Imports of tall oil, tall oil pitch and tall oil fatty acids decreased substantially from 7,670 tonnes in 1976 to 5,916 tonnes in 1977 (Table 68). Levels of importations had remained fairly stable since 1973 up to 1977. Average prices for these products increased from \$380. per tonne in 1976 to \$549. per tonne in 1977.

Canadian imports of chemically modified oils, fats and waxes in 1977 remained at a level close to that in 1976 (Table 69). The United States remains the major supplier of these products. Average prices per tonne of this mix was \$881. in 1977 as compared to \$730. per tonne in 1976.

Exports of chemically modified oils, fats and waxes rose by 27.7 per cent from 1976 to 1977 (Table 71). The average price rose dramatically from \$220. per tonne in 1976 to \$729. per tonne in 1977.

TABLE 66CANADIAN IMPORTS OF CASTOR OIL

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Brazil	2,401	1,529	1,697	968	257
Colombia	8	-	-	-	-
Ecuador	-	-	-	-	29
United States	377	320	211	345	1,025
TOTAL	<u>2,787</u>	<u>1,850</u>	<u>1,908</u>	<u>1,313</u>	<u>1,311</u>
TOTAL VALUE (\$'000)	<u>2,858</u>	<u>1,646</u>	<u>1,169</u>	<u>822</u>	<u>1,343</u>

SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 67CANADIAN IMPORTS OF TUNG OIL

(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Argentina	991	127	141	70	29
Brazil	14	--	--	14	--
Denmark	--	--	--	<u>1/</u>	--
Paraguay	57	42	56	381	223
People's Republic of China	89	183	70	20	--
United States	88	70	423	247	433
Uruguay	--	--	--	--	14
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	<u>1,241</u>	<u>425</u>	<u>690</u>	<u>734</u>	<u>699</u>
TOTAL VALUE (\$'000)	<u>527</u>	<u>308</u>	<u>441</u>	<u>663</u>	<u>1,371</u>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-007.



TABLE 68

CANADIAN IMPORTS OF TALL OIL, TALL OIL PITCH AND TALL OIL FATTY ACIDS					
(Metric Tons)					
	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
<u>TALL OIL AND TALL OIL PITCH</u>					
Netherlands	4	--	--	--	--
United States	1,502	2,254	2,378	2,849	757
<u>TALL OIL FATTY ACIDS</u>					
Germany, West	--	--	--	15	--
People's Republic of China	--	--	2	--	--
United States	<u>5,807</u>	<u>4,715</u>	<u>5,503</u>	<u>4,806</u>	<u>5,159</u>
TOTAL	<u>7,314</u>	<u>6,969</u>	<u>7,433</u>	<u>7,670</u>	<u>5,916</u>
TOTAL VALUE (\$'000)	<u>1,931</u>	<u>3,500</u>	<u>3,447</u>	<u>2,906</u>	<u>3,252</u>

SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 69

CANADIAN IMPORTS OF CHEMICALLY MODIFIED OILS,FATS AND WAXES  
(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Brazil	--	20	69	--	40
Denmark	1	--	<u>1/</u>	--	--
France	<u>1/</u>	3	--	--	--
Germany, West	3	8	8	72	69
Greece	--	--	3	--	3
Israel	--	--	--	<u>1/</u>	--
Japan	15	--	--	--	--
Netherlands	418	398	442	214	116
Netherlands-Antilles	--	--	23	--	--
Switzerland	--	--	<u>1/</u>	--	--
United Kingdom	419	55	1,125	1,219	53
United States	<u>6,569</u>	<u>5,198</u>	<u>4,176</u>	<u>4,606</u>	<u>5,848</u>
TOTAL	<u>7,425</u>	<u>5,677</u>	<u>5,850</u>	<u>6,112</u>	<u>6,132</u>
TOTAL VALUE (\$'000)	<u>3,985</u>	<u>5,401</u>	<u>6,925</u>	<u>6,084</u>	<u>5,405</u>

1/ Less than one metric ton.SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 70

CANADIAN IMPORTS OF MIXTURES AND DERIVATIVES  
OF OILS, FATS AND WAXES  
(Metric Tons)

<u>COUNTRY OF ORIGIN</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Belgium-Luxembourg	--	1	--	--	--
Brazil	--	--	20	--	--
Denmark	--	--	--	--	2
France	--	3	6	1	<u>1</u> /
Germany, West	41	103	98	116	116
India	--	--	--	<u>1</u> /	--
Japan	--	--	--	--	--
Netherlands	2	1	--	<u>1</u> /	--
Norway	--	--	--	118	237
Sweden	2	--	--	--	--
United Kingdom	147	66	153	316	604
United States	<u>15,144</u>	<u>14,780</u>	<u>10,886</u>	<u>12,031</u>	<u>10,555</u>
TOTAL	<u>15,338</u>	<u>14,958</u>	<u>11,163</u>	<u>12,585</u>	<u>11,516</u>
TOTAL VALUE (\$'000)	<u>6,996</u>	<u>10,022</u>	<u>8,415</u>	<u>9,195</u>	<u>10,969</u>

1/ Less than one metric ton.

SOURCE: Statistics Canada, Catalogue No. 65-007.

TABLE 71

CANADIAN EXPORTS OF CHEMICALLY MODIFIED OILS,  
FATS AND WAXES  
(Metric Tons)

<u>DESTINATION</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Australia	--	1	--	--	--
Bahamas	--	<u>1</u> /	--	--	--
Barbados	--	--	27	--	--
Bermuda	<u>1</u> /	--	--	--	--
Brazil	22	--	--	--	--
Cuba	--	--	--	--	--
France	--	32	14	--	--
Germany, West	44	24	<u>1</u> /	2	--
Guyana	--	--	<u>1</u> /	--	--
Israel	--	--	4	--	--
Italy	16	--	--	--	--
Japan	408	240	20	--	--
Leeward-Windward Is.	<u>1</u> /	--	--	--	<u>1</u> /
Netherlands-Antilles	--	1	--	--	--
Panama	<u>1</u> /	--	--	--	--
Poland	--	--	--	<u>1</u> /	--
United Kingdom	19	36	18	--	150
United States	1,461	1,759	3,212	3,008	3,100
U.S.S.R.	--	--	--	--	508
Venezuela	--	1	9	1	86
<b>TOTAL</b>	<u>2,062</u>	<u>2,097</u>	<u>3,306</u>	<u>3,012</u>	<u>3,846</u>
<b>TOTAL VALUE (\$'000)</b>	<u>821</u>	<u>995</u>	<u>578</u>	<u>663</u>	<u>2,803</u>

1/ Less than one metric ton.

CHAPTER 14SELECTED FINISHED PRODUCTS

Production of peanut butter dropped for the third year to the 1974 level (Table 72).

In contrast to reduced peanut butter production, salad dressing and mayonnaise production has increased considerably by 23.8 per cent in 1977, as compared to 1976 (Table 72).

Sandwich spread production is continuing its slight yearly decrease from 1973 (Table 72).

TABLE 72

CANADIAN PRODUCTION OF PEANUT BUTTER, SALAD DRESSINGS  
AND MAYONNAISE, AND SANDWICH SPREADS

(Metric Tons)

<u>PRODUCT</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Peanut Butter	25,628	29,211	33,211	30,473 <sup>4/</sup>	29,216
Salad Dressings <sup>1/</sup>					
and Mayonnaise <sup>2/</sup>	39,326	41,504	38,379	35,942	44,550
Sandwich Spreads	2,948	2,766	x <sup>3/</sup>	2,609	2,455
TOTAL	<u>67,902</u>	<u>73,481</u>	<u>-</u>	<u>69,879</u>	<u>76,221</u>

/ Salad dressing and French dressings shall contain not less than 35% vegetable oil.

/ Mayonnaise, mayonnaise dressing and mayonnaise salad dressing shall contain not less than 65% vegetable oil.

/ Confidential to meet secrecy requirements of the Statistics Act.

/ Revised figure for 1976.

SOURCE: Statistics Canada, Catalogue No. 32-018



CONVERSION FACTORSSTATUTORY WEIGHT PER BUSHEL AND BUSHEL EQUIVALENT PER METRIC TON

<u>OILSEED</u>	<u>Pounds</u>	<u>Kilograms</u>	<u>Bushel Equivalent Per Metric Ton</u>
Flaxseed	56	25.402	39.368
Soybeans	60	27.216	36.744
Rapeseed	50	22.680	44.092
Sunflowerseed	30	13.608	73.487
Mustardseed	50	22.680	44.092

<u>OILSEED PRODUCTS</u>	<u>Extraction Rate</u> (Per Cent)	<u>Yield Per Bushel</u> (Pounds)	<u>Weight of Gallon</u> (Pounds)
Flaxseed, Oil	35.4	19.8	9.3
Linseed Meal	61.7	34.6	-
Soybeans, Oil	17.7	10.6	9.2
Meal	80.0	47.3	-
Rapeseed, Oil <sup>1/</sup>	40.0	20.0	9.1
Meal	57.5	28.75	-
Sunflowerseed, Oil <sup>2/</sup>	40.0	12.0	
Meal	38.0	11.4	9.2
Mustardseed, <sup>3/</sup> Oil (Yellow)	28	-	-
Oil (Oriental)	40	-	-
Oil (Brown)	36	-	-

<sup>1/</sup> Rapeseed oil yields seem to have reached a fairly stable level of about 40 per cent on an "as received" basis. The previous factor of 37.5 per cent has been changed accordingly.

<sup>2/</sup> The introduction of new sunflowerseed varieties has increased the oil yield on crushing to the 40 per cent level. The previous factor of 36 per cent has been changed accordingly. The meal yields continue to show fluctuations, and this factor has not been changed.

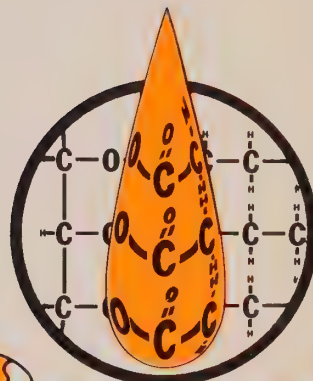
<sup>3/</sup> Mustardseed is not crushed in Canada, and is primarily used for condiment purposes. Yellow, oriental and brown mustardseed varieties are grown in Canada, and the theoretical extraction rates reflect average oil contents of the seed, calculated on a dry basis.

OTHER PRODUCTS: Marine Oils: 1 Imperial gallon = 9.1 pounds.





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# Fats & Oils in Canada

ANNUAL REVIEW 1978



DEPARTMENT OF INDUSTRY, TRADE AND COMMERCE

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## CHAPTER I

### CANOLA MEAL (LOW GLUCOSINOLATE RAPESEED MEAL) IN RATIONS FOR LIVESTOCK AND POULTRY

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The most important factor that has contributed to expansion in usage of rapeseed meal in feeds for livestock and poultry in recent years has been the development of low glucosinolate type rapeseed seed by Canadian and European plant breeders. Releases of low glucosinolate varieties of rapeseed in Canada have made it possible for Canadian farmers to rapidly expand production of this type of rapeseed. In the latter regard, about 50 per cent of the 1978 Canadian rapeseed crop of 3.4 million tonnes was of low glucosinolate type. It is expected that in 1979 60-65 per cent of Canada's rapeseed crop will be of low glucosinolate type. Estimates on the size of the 1979 rapeseed crop range to 200 million bushels. The low glucosinolate varieties that will be grown commercially in Canada in 1979 are Tower, Regent, Altex and Candle.

Since much of the 1979 Canadian rapeseed crop is expected to be of low glucosinolate type and since meal derived from such seed is much superior for feeding purposes to meal produced from the high glucosinolate type rapeseed which is still grown in most other countries of the world, the Canadian rapeseed industry has settled on the name "Canola Meal" to identify rapeseed meal produced from Canadian low glucosinolate type rapeseed.

## COMPOSITION

**Protein and Amino Acids.** The protein content of rapeseed meal derived from Candle rapeseed is approximately 35% while that from Tower, Regent and Altex rapeseed is 38 to 39%. The amino acid composition (Table 1) of low glucosinolate rapeseed meal does not differ from that of high glucosinolate rapeseed meal. However, some evidence has been obtained by Summers et al., at the University of Guelph, which suggests that the availability of amino acids is improved in low glucosinolate rapeseed meal compared to that in high glucosinolate rapeseed meal. From the point of view of amino acids in rapeseed meal versus those in soybean meal, it is well recognized that rapeseed meal is lower in lysine and higher in sulphur containing amino acids than soybean meal. As a consequence, these two protein-rich feedstuffs tend to complement each other when used together in rations.



Ether Extract. The ether extract from Canadian rapeseed meal tends to be higher than that from soybean meal. This is because, in Canada, rapeseed gums are usually added back to rapeseed meal at about the 1½% level. Experimentally, addition of as much as 6% of rapeseed gums to rapeseed meal has been shown to have no detrimental effects on the feeding value of rapeseed meal for broilers (Table 2) or layers (Table 3). Addition of rapeseed gums to rapeseed meal increases the energy value of the rapeseed meal and in this respect should actually be beneficial.

Minerals. Generally speaking, rapeseed meal is a richer source of minerals than soybean meal. However, it has been shown by Bragg et al., at the University of British Columbia, in studies with chicks, that the availabilities of the minerals in rapeseed meal are lower than in soybean meal. In spite of the lower availabilities of minerals in rapeseed meal versus those in soybean meal, rapeseed meal is still a better source of available calcium, iron, manganese, phosphorus, selenium and magnesium than soybean meal, while soybean is a better source of available copper, zinc and potassium than rapeseed meal.

Glucosinolates. The glucosinolate content of low glucosinolate rapeseed meal is only about one-eighth to one-tenth that of high glucosinolate rapeseed meal. In this regard, in the University of Alberta laboratories, 10 samples of Tower and 3 samples of Candle rapeseed meal were found to contain 1.04 and 0.62 mg/g of glucosinolates whereas Bell et al., have reported average values for high glucosinolate - B. napus and high glucosinolate - B. campestris rapeseed meals of 8.5 and 6.3 mg/g respectively. While the glucosinolates present in low glucosinolate rapeseed meal do cause minor thyroid enlargement, the effect on the thyroid glands is not considered to have practical significance.

Energy. A serious drawback to the use of rapeseed meal in rations for poultry has been the low metabolizable energy value assigned to this feedstuff for this class of livestock (Table 4). The value of 1760 kcal/kg previously suggested for poultry has been thought by numerous researchers to be too low. On the basis of data collected recently in Canada on the metabolizable energy value of Tower rapeseed meal, it would appear that 1900 kcal/kg and 2000 kcal/kg are appropriate metabolizable energy values to use for growing and adult poultry, respectively.

#### USE IN RATIONS FOR LIVESTOCK

One of the main drawbacks of high glucosinolate rapeseed meal for ruminants and swine has been its low palatability. Fortunately, this problem has, for all practical purposes, been resolved by the introduction of low glucosinolate rapeseed meal. Research in Canada at various universities and experimental stations has shown that low glucosinolate rapeseed meal is much more palatable to cattle and swine than high glucosinolate rapeseed meal.

Cattle and Sheep. High glucosinolate rapeseed meal has been reasonably well accepted as a feedstuff for inclusion in rations for cattle. Canadian-type high glucosinolate rapeseed meal has been used successfully at levels of 20%, 5% and 10% of the dry matter in rations for calves, dairy cows and beef cattle. Efforts to decrease palatability problems by addition of molasses or "feed flavor" to high glucosinolate rapeseed meal by Ingalls and Sharma (1975) resulted in only a slight increase in feed intake of rations containing high glucosinolate rapeseed meal.

However, the latter workers showed that the inclusion of up to 24% of low glucosinolate rapeseed meal (Bronowski) in the grain mix of dairy cows did not affect milk yield or composition adversely. Fisher and Walsh (1976) fed dairy cows grain mixtures which contained 0, 11, 22 and 34% low glucosinolate rapeseed meal (Tower) and concluded that low glucosinolate rapeseed meal derived from the Tower variety could be included up to the 22% level in grain mixes for dairy cows without appreciably affecting productive traits. In an experiment with dairy cows Sharma *et al.*, (1977) have demonstrated that the inclusion of 25% of low glucosinolate rapeseed meal (Tower) had no adverse effects on feed consumption, milk yield or milk composition. It would appear from the above that low glucosinolate rapeseed meal may be safely fed in the grain mixture of dairy cows at twice the previously recommended level for high glucosinolate rapeseed meal.

Table 1. Amino acids in rapeseed meal and soybean meal<sup>1/</sup>

	High glucosinolate rapeseed meal	Low glucosinolate rapeseed meal	Soybean meal
Arginine	6.01	5.84	6.44
Cystine	0.97	1.15	0.65
Glycine	4.74	5.00	4.60
Histidine	2.75	2.73	2.40
Isoleucine	3.65	4.00	4.69
Leucine	6.51	7.00	7.49
Lysine	5.54	5.59	6.22
Methionine	1.75	1.75	1.40
Phenylalanine	3.76	4.02	4.80
Threonine	4.26	4.55	3.80
Tryptophane	1.23	1.16	1.20
Valine	4.81	5.10	5.00

<sup>1/</sup> Expressed as % of N x 6.25

Table 2. Rapeseed gums on performance of broilers<sup>1/</sup>

	Soybean meal ration			Rapeseed meal ration	
% gums in meal	0	2	6	2	6
Body wt, g	803	813	809	788	807
Feed/gain	1.63	1.63	1.60	1.63	1.63

<sup>1/</sup> Four groups of 20 broiler-type chicks on each gum-containing ration, eight groups on zero gum ration. Four week test period.



Table 3. Rapeseed gums on the performance of layers<sup>1/</sup>

% gums in rapeseed meal	Shaver Starcross 288			Hyline W36		
	0	2	6	0	2	6
HHP, %	71.9	72.8	71.2	71.6	71.1	73.1
Feed, kg/Doz	1.93	1.94	1.92	1.95	1.89	1.87
Egg weight, g	59.4	59.5	59.7	57.3	57.7	57.6
Haugh units	77.2	77.6	78.5	73.3	70.6	72.0
Specific gravity	1.080	1.081	1.081	0.087	1.083	1.083
Mortality, %	4.5	4.5	2.5	3.5	2.5	2.5

<sup>1/</sup> Duplicate groups of 100 pullets of each strain were placed on each ration. Ration 1 contained 10% of Tower rapeseed meal. Rations 2 and 3 contained 10% Tower rapeseed meal to which either 2 or 6% of rapeseed gums was added. 48 week test period.

Table 4. Energy content of rapeseed meal and soybean meal<sup>1/</sup>

	Rapeseed meal, as fed	Soybean meal (45.8%), as fed
Cattle DE, kcal/kg	2830	3178
Swine DE, kcal/kg	2900	3300
Cattle ME, kcal/kg	2400	2606
Chickens ME, kcal/kg	1900	2249
Swine ME, kcal/kg	2700	2825
Cattle TDN, %	64	72
Swine TDN, %	66	75

<sup>1/</sup> Rapeseed meal values based on Canadian data, soybean meal values taken from United States - Canadian Tables of Feed Composition.

Swine. At a symposium on rapeseed meal held in Vancouver last year Aherne et al., (1977) reviewed the many published papers and progress reports to which he had access which dealt with the use of rapeseed meal in rations for growing pigs. After giving due consideration to the research reviewed he concluded that for starting, growing and finishing pigs low glucosinolate rapeseed meal (Tower) could be included in starting and growing rations at the 10% level and as the sole source of supplementary protein in rations for finishing pigs.

High glucosinolate rapeseed meal has had a bad image as a feed-stuff for breeding pigs. Results obtained in the past on rapeseed meals of varying glucosinolate content have suggested that problems observed in breeding pigs have been related to the glucosinolate contents of the meals. This is borne out by two experiments recently conducted in Canada. In the first experiment Flipot et al., (1977) fed gilts rations containing 10% of low glucosinolate rapeseed meal (Tower) or a comparable level of soybean meal throughout gestation and lactation and found that the gilts fed the low glucosinolate rapeseed meal containing ration performed just as well as those fed soybean meal. In another study by Hartsock (unpublished) low glucosinolate rapeseed meal (Tower) was supplied as the sole source of supplementary protein from 60 kg liveweight through the first lactation. No significant differences were noted in services per conception or litter size at birth or at weaning between the low glucosinolate rapeseed meal fed

gilts. These results suggest that low glucosinolate rapeseed meal is a satisfactory source of protein for breeding pigs and that no reduction in performance is likely to occur from use of high levels of same in rations for gilts and sows during gestation and lactation.

#### USE IN RATIONS FOR POULTRY

Broiler Chicken. Previously it was recommended that Canadian high glucosinolate rapeseed meal be used in chicken broiler rations at levels up to 15% of the ration. This recommendation was based on many experiments in which high glucosinolate rapeseed meals were used. Slinger at the University of Guelph, compared the performance of broilers fed isocaloric and isonitrogenous rations based on corn using low glucosinolate rapeseed meal (Tower) made by the pre-press solvent and direct solvent procedures. A summary of the results obtained is given in Table 5. Inclusion of 10 or 20% of Tower rapeseed meal, processed by either procedure, in the ration was found to have no adverse effect on rate of growth or feed efficiency at 8 weeks of age. Thyroid size was not affected by feeding either level of low glucosinolate rapeseed meal.

Two experiments were conducted at the University of Alberta in which levels of 10, 20 and 30% of low glucosinolate rapeseed meal (Tower or Candle) were included in wheat-based broiler rations. The rations were kept isocaloric and isonitrogenous. The results obtained (Table 6) indicated that growth and feed efficiency were just as satisfactory on rations containing up to 30% of either Tower or Candle rapeseed meal as on the control ration containing soybean meal. The chickens fed low glucosinolate rapeseed meal from either variety of rapeseed had somewhat larger thyroids than those fed the control ration containing soybean meal but there were no apparent adverse effects from the enlargement that occurred.

Based on results such as those referred to above, it may be concluded that rapeseed meal derived from Canadian low glucosinolate rapeseed may be used in broiler rations at least at the 20% level of inclusion without producing adverse effects on productive traits.

Table 5. Effect of low glucosinolate rapeseed meal - broilers<sup>1/</sup>

Rations	Wt gain, g	Feed/gain	mg Thyroid/100g body wt
Control (corn- soybean meal)	1631	1.99	7.4
10% Tower rapeseed meal	1695	1.97	8.1
20% Tower rapeseed meal	1699	1.93	8.5
10% Tower rapeseed meal	1695	1.96	9.1
20% Tower rapeseed meal	1684	1.93	9.2

<sup>1/</sup> University of Guelph data. Eight week test period.

Table 6. Effect of low glucosinolate rapeseed meal - broilers<sup>1/</sup>

Rations	Wt gain, g	Feed/gain	mg Thyroid/ 100g body wt
SBM Control	1888	2.33	9.5
10% Tower Rapeseed meal	1939	2.31	14.0
20% Tower Rapeseed meal	1942	2.29	16.6
30% Tower Rapeseed meal	1938	2.32	17.1
10% Candle Rapeseed Meal	1931	2.32	12.3
20% Candle Rapeseed meal	1942	2.32	14.7
30% Candle Rapeseed meal	1891	2.36	15.1

<sup>1/</sup> Values represent averages for two experiments involving three groups of 40 broiler-type chicks (20 male and 20 female) in one experiment and three groups of 34 broiler-type chicks (17 male and 17 female) in the other. Eight week test period.

Table 7. Effect of low and high glucosinolate rapeseed meal - layers

Exp <sup>1/</sup>	Rations	HHP,%	Egg wt, g	Feed,kg/ Doz	Mort,%	Mg Thyroid/ 100g body wt
1	Control (wheat-SBM)	79.6	59.7	1.86	3.4	7.8
	5% LG-RSM	78.5	59.8	1.83	5.8	13.5
	10% LG-RSM	81.3	59.0	1.78	4.0	19.4
	5% LG-RSM	81.5	59.4	1.82	1.8	10.2
	10% LG-RSM	80.5	59.1	1.80	5.4	11.8
2	Control (wheat-SBM)	72.0	62.4	1.93	4.1	8.5
	5% LG-RSM	71.1	62.3	1.99	4.1	11.0
	10% LG-RSM	71.9	62.5	1.93	3.1	15.9
	15% LG-RSM	72.2	61.7	1.94	5.8	19.4
3	Control (wheat-SBM)	81.6	59.2	1.74	1.1	7.9
	10% LG-RSM	81.6	59.6	1.72	1.4	14.6
	12.5% LG-RSM	79.1	59.4	1.76	2.1	17.9
	15% LG-RSM	78.6	59.0	1.70	4.3	16.7
	10% HG-RSM	76.8	59.2	1.75	4.3	104.6
	15% HG-RSM	74.9	58.8	1.81	3.5	103.8

<sup>1/</sup> In experiments 1 and 3, two groups of 35 and two groups of 70 Shaver Starcross 288 White Leghorns were placed on each ration. In experiment 2, 4 groups of 44 Shaver Starcross 288 White Leghorns were placed on each ration. 44 week test period.

Table 8. Effect of low glucosinolate rapeseed meal - layers<sup>1/</sup>

Rations	HHP,%	Egg wt, g	Feed,kg/doz	Mort,%
Control (corn-SBM)	77.6	57.0	1.69	6
15% Tower (CVO) RSM	82.0	55.1	1.54	4

<sup>1/</sup> University of Guelph data. Twenty week test period.

Laying and Breeding Chickens. Previously it was recommended that Canadian high glucosinolate rapeseed meal be used in chicken laying and breeding rations on feeding trials which indicated that inclusion of 10% of high glucosinolate rapeseed meal in laying rations increased



mortality, decreased egg production and affected egg size, and Haugh unit values to a minor degree while 5% high glucosinolate rapeseed meal in the ration produced no adverse effects on productive traits.

Several experiments have been conducted at the University of Alberta and the University of Guelph to evaluate the use of Canadian low glucosinolate rapeseed meal in rations for laying chickens. The results of such experiments (Tables 7 and 8) indicated that at least 10% of Canadian low glucosinolate rapeseed meal may be incorporated in rations for laying chickens without adversely affecting mortality, egg production, feed conversion or egg size. Even the use of 15% of Tower rapeseed meal had little, if any, adverse effects on productive traits. Although feeding low glucosinolate rapeseed meal resulted in some increase in thyroid size, level of mortality and productive performance were not affected. In contrast, in groups fed 10 or 15% of high glucosinolate rapeseed meal (Table 7) thyroid size was greatly increased and productivity was significantly reduced.

#### CONCLUSION

On the basis of our present knowledge of Canola meal it seems reasonable, assuming protein supplement cost relationships are favourable, to recommend the usage levels shown in Table 9.

Table 9. Recommended levels of use for Canadian rapeseed meal

	High gluco- sinolate, %	Low gluco- sinolate, %
Chickens		
Starter, grower	15	20
Layer, breeder	5	10
Turkeys		
Starter, grower	10	20
Breeder	10	10
Swine		
Starter, grower, finisher	5	10
Breeder	3	*
Cattle		
Calves (of dry matter)	20	20
Dairy cows (of dry matter)	5	10
Beef (of dry matter)	10	10

\* May be used as the sole source of supplementary protein.

## CHAPTER 2

### WORLD PRODUCTION AND TRADE IN FATS, OILS AND MEALS

#### World Oils And Fats: Calculated Production

World production of oils and fats in 1979 is forecast at 55 million tonnes, compared to a revised estimate of 52.7 million tonnes for 1978.

The increase for 1979 stems entirely from the edible vegetable oils and palm oils categories; other sectors show declines for 1979 compared to 1978 production levels.

Vegetable oil production from annual oilseeds plus olive oil accounts for 54.7 per cent of total oils and fats production in 1979. Animal fat production continued at a stable level of 14.6 million tonnes in 1979.

#### World Production of Oilmeals

Estimates of oilmeal production for crop year 1977/78 indicate a sharp increase of some 12 per cent over 1976/77. Much of the increase is comprised of soymeal which accounts for 61.7 per cent of total world output of 82.3 million tonnes.

Cottonseed meal and sunflowerseed meal also showed significant increases in 1977/78 over 1976/77.

Table 1

WORLD OILS AND FATS: CALCULATED PRODUCTION<sup>1/</sup>

(Thousands of Tonnes)

<u>EDIBLE VEGETABLE OILS</u>	<u>1975</u>	<u>1976</u>	<u>Estimated 1977</u>	<u>Forecast 1978</u>	<u>Forecast 1979</u>
Cottonseed	3 219	2 766	2 945	3 383	3 231
Peanut	3 183	3 584	3 184	3 085	3 356
Soybean	8 325	10 177	9 131	11 214	12 128
Sunflower	3 989	3 665	3 730	4 612	4 918
Rapeseed	2 713	2 857	2 271	2 987	3 508
Sesame	603	630	591	646	677
Safflower	217	320	201	283	280
Olive <sup>2/</sup>	1 419	1 783	1 330	1 362	1 530
Corn	297	412	410	445	455
TOTAL	23 965	26 194	23 793	28 017	30 083
<u>PALM OILS</u> <sup>3/</sup>					
Coconut	2 918	3 314	3 059	3 221	2 974
Palm Kernel	508	522	553	573	632
Palm	2 910	3 082	3 354	3 421	3 946
Babassu	105	125	90	95	100
TOTAL	6 441	7 043	7 056	7 310	7 652
<u>INDUSTRIAL OILS</u>					
Linseed	745	792	722	964	929
Castor	339	306	330	411	411
Oiticica	11	15	14	14	14
Tung	108	100	95	110	95
Olive Residue <sup>4/</sup>	132	185	145	153	164
TOTAL	1 335	1 398	1 306	1 652	1 613



<u>ANIMAL FATS</u>	<u>1975</u>	<u>1976</u>	<u>Estimated 1977</u>	<u>Forecast 1978</u>	<u>Forecast 1979</u>
Butter (Fat Content)	4 572	4 690	4 879	4 930	5 000
Lard	4 430	4 145	4 297	4 324	4 355
Tallow, Grease	4 411	5 141	5 419	5 383	5 250
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	13 313	13 976	14 595	14 637	14 605
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
<u>MARINE OILS</u>					
Whale	45	45	40	40	35
Sperm Whale	119	119	110	110	100
Fish (Including Liver)	1 003	953	882	910	910
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	1 167	1 117	1 032	1 060	1 045
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
GRAND TOTAL	46 221	49 728	47 782	52 676	54 998
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

<sup>1/</sup> Years indicated are those in which most of given oil was produced. Includes oil equivalent of seed production.

<sup>2/</sup> Excludes olive residue oil.

<sup>3/</sup> Estimated on basis of exports and other information.

<sup>4/</sup> Includes quantities of refined oil for edible purposes.

SOURCE: United States Department of Agriculture, FOP 16-78.

Table 2

MAJOR OILS & FATS: WORLD PRODUCTION, DISAPPEARANCE, AND STOCKS<sup>1/</sup>

(Thousand Tonnes)

Primarily for Food:

<u>Soybean Oil</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78<sup>2/</sup></u>	<u>1978/79<sup>2/</sup></u>
Opening Stocks <sup>3/</sup>	805	833	1 190	985	1 195
Production <sup>4/</sup>	8 294	10 242	10 017	11 625	11 850
Disappearance <sup>3/</sup>	8 266	9 885	10 222	11 415	11 745
Ending Stocks <sup>3/</sup>	833	1 190	985	1 195	1 300
<u>Cottonseed Oil</u>					
Opening Stocks <sup>3/</sup>	210	240	210	190	210
Production <sup>4/</sup>	2 971	2 547	2 738	3 018	2 930
Disappearance <sup>3/</sup>	2 941	2 577	2 758	2 998	2 910
Ending Stocks <sup>3/</sup>	240	210	190	210	230
<u>Groundnut Oil</u>					
Opening Stocks <sup>3/</sup>	290	305	440	405	340
Production <sup>4/</sup>	2 604	3 195	2 748	2 609	2 760
Disappearance <sup>3/</sup>	2 589	3 060	2 783	2 674	2 730
Ending Stocks <sup>3/</sup>	305	440	405	340	370
<u>Sunflower Oil</u>					
Opening Stocks <sup>3/</sup>	500	780	440	235	360
Production <sup>4/</sup>	3 899	3 411	3 394	4 252	4 740
Disappearance <sup>3/</sup>	3 619	3 751	3 599	4 127	4 580
Ending Stocks <sup>3/</sup>	780	440	235	360	520
<u>Rapeseed Oil</u>					
Opening Stocks <sup>3/</sup>	205	225	240	270	285
Production <sup>4/</sup>	2 444	2 616	2 809	2 661	3 020
Disappearance <sup>3/</sup>	2 424	2 601	2 779	2 646	2 950
Ending Stocks <sup>3/</sup>	225	240	270	285	355
<u>Sesame Oil</u>					
Opening Stocks <sup>3/</sup>	47	44	45	45	44
Production <sup>4/</sup>	651	611	625	629	634
Disappearance <sup>3/</sup>	654	610	625	630	633
Ending Stocks <sup>3/</sup>	44	45	45	44	45

<u>Olive Oil</u> <sup>5/</sup>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u> <sup>2/</sup>	<u>1978/79</u> <sup>2/</sup>
Opening Stocks <sup>3/</sup>	268	421	710	710	740
Production <sup>4/</sup>	1 561	1 764	1 461	1 526	1 600
Disappearance <sup>3/</sup>	1 408	1 475	1 461	1 496	1 540
Ending Stocks <sup>3/</sup>	421	710	710	740	800
<u>Coconut Oil</u>					
Opening Stocks <sup>3/</sup>	250	323	355	330	325
Production <sup>4/</sup>	2 490	3 094	2 752	2 857	2 740
Disappearance <sup>3/</sup>	2 417	3 062	2 777	2 862	2 700
Ending Stocks <sup>3/</sup>	323	355	330	325	365
<u>Palm Kernel Oil</u>					
Opening Stocks <sup>3/</sup>	65	70	73	77	65
Production <sup>4/</sup>	473	503	555	498	565
Disappearance <sup>3/</sup>	468	500	551	510	550
Ending Stocks <sup>3/</sup>	70	73	77	65	80
<u>Palm Oil</u>					
Opening Stocks <sup>3/</sup>	256	333	353	510	490
Production <sup>4/</sup>	2 450	2 650	2 934	2 930	3 340
Disappearance <sup>3/</sup>	2 373	2 630	2 777	2 950	3 240
Ending Stocks <sup>3/</sup>	333	353	510	490	590
<u>Butter, Fat Content</u>					
Opening Stocks <sup>3/</sup>	886	867	975	1 038	1 162
Production <sup>4/</sup>	5 165	5 368	5 556	5 631	5 650
Disappearance <sup>3/</sup>	5 184	5 250	5 493	5 507	5 562
Ending Stocks <sup>3/</sup>	867	975	1 038	1 162	1 250
<u>Lard</u>					
Opening Stocks <sup>3/</sup>	243	260	250	265	270
Production <sup>4/</sup>	4 054	3 714	3 881	4 032	4 160
Disappearance <sup>3/</sup>	4 037	3 724	3 866	3 027	4 145
Ending Stocks <sup>3/</sup>	260	250	265	270	285
<u>Fish Oil</u>					
Opening Stocks <sup>3/</sup>	289	350	330	327	310
Production <sup>4/</sup>	1 047	984	959	975	1 010
Disappearance <sup>3/</sup>	986	1 004	962	992	1 000
Ending Stocks <sup>3/</sup>	350	330	327	310	320

Food Oils & Fats, Total	1974/75	1975/76	1976/77	1977/78 <sup>2/</sup>	1978/79 <sup>2/</sup>
Opening Stocks <sup>3/</sup>	4 314	5 051	5 611	5 387	5 796
Production	38 103	40 689	40 429	43 243	44 999
Total Supplies <sup>4/</sup>	42 417	45 740	46 040	48 630	50 795
Disappearance <sup>3/</sup>	37 366	40 129	40 653	42 834	44 285
Ending Stocks <sup>3/</sup>	5 051	5 611	5 387	5 796	6 510

Primarily for Non-Food:

Linseed Oil

Opening Stocks <sup>3/</sup>	115	117	150	182	170
Production	598	638	703	753	780
Disappearance <sup>4/</sup>	596	605	671	765	800
Ending Stocks <sup>3/</sup>	117	150	182	170	150

Castor Oil

Opening Stocks <sup>3/</sup>	110	150	120	80	87
Production	372	314	304	345	355
Disappearance <sup>4/</sup>	332	344	344	338	340
Ending Stocks <sup>3/</sup>	150	120	80	87	102

Tallow & Greases

Opening Stocks <sup>3/</sup>	490	436	459	495	525
Production	5 241	5 573	5 845	6 005	5 880
Disappearance <sup>4/</sup>	5 295	5 550	5 809	5 975	5 870
Ending Stocks <sup>3/</sup>	436	459	495	525	535

Tung Oil

Opening Stocks <sup>3/</sup>	29	30	20	17	18
Production	107	108	106	101	105
Disappearance <sup>4/</sup>	106	118	109	100	105
Ending Stocks <sup>3/</sup>	30	20	17	18	18

GRAND TOTAL

Opening Stocks <sup>3/</sup>	5 058	5 784	6 360	6 161	6 596
Production	44 421	47 322	47 387	50 447	52 119
Total Supplies	49 479	53 106	53 747	56 608	58 715
Disappearance <sup>3/</sup>	43 695	46 746	47 586	50 012	51 400
Ending Stocks <sup>3/</sup>	5 784	6 360	6 161	6 596	7 315

FOOTNOTES TO

MAJOR OILS & FATS: WORLD PRODUCTION, DISAPPEARANCE, AND STOCKS<sup>1/</sup>

<sup>1/</sup> October-September

<sup>2/</sup> Preliminary

<sup>3/</sup> Estimated

<sup>4/</sup> Estimated of the balance

SOURCE: "Oil World", Hamburg, November 10, 1978.

Table 3

WORLD PRODUCTION OF OILMEALS <sup>1/</sup>

(Thousand Tonnes)

	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u> <sup>2/</sup>	<u>1977/78</u> <sup>3/</sup>
Soybean Meal	38 781	36 917	44 683	43 545	50 795
Cottonseed Meal	9 731	9 788	8 416	8 997	9 934
Groundnut Meal	3 540	3 605	4 429	3 825	3 669
Sunflower Meal	4 725	4 408	3 936	4 012	5 047
Rapeseed Meal	3 883	3 894	4 149	4 360	4 170
Sesame Meal	795	766	722	740	745
Copra Meal	1 214	1 460	1 805	1 617	1 665
Palm Kernel Meal	505	554	591	649	593
Linseed Meal	1 286	1 166	1 244	1 350	1 460
Fishmeal & Solubles	<u>4 092</u>	<u>4 586</u>	<u>4 531</u>	<u>4 325</u>	<u>4 230</u>
GRAND TOTAL	<u>68 552</u>	<u>67 144</u>	<u>74 506</u>	<u>73 420</u>	<u>82 308</u>

<sup>1/</sup> October-September crop year. Actual production in the countries where the crush is taking place, and in the period shown, irrespective of whether from new crop or old.

<sup>2/</sup> Preliminary

<sup>3/</sup> Estimated

SOURCE: "Oil World", Hamburg, November 10, 1978.



### CHAPTER 3

#### CANADIAN OILSEED PRODUCTION, AND TRADE IN FATS AND OILS

##### Canadian Oilseeds: Acreage, Yield, Production

Canada produces four oilseed crops: rapeseed, flaxseed, soybeans and sunflowerseed. Mustardseed is also produced, not for its oil content but rather as a condiment and mainly for export in unprocessed form.

Rapeseed production increased sharply in 1978 to 3.35 million tonnes, largely because of attractive price levels vis-a-vis competing crops.

Flaxseed production was down slightly in 1978, at 538 500 tonnes, due to reduced acreage coupled with slightly lower yields.

Soybean production, almost entirely in Ontario, fell to 475 134 tonnes, due to sharply reduced yields.

Sunflowerseed production, at 113 853 tonnes, was up from the previous year and the highest in recent years.

Mustardseed production, at 103 420 tonnes was 30 per cent above 1977 production levels.

##### Canadian Imports of Fats And Oils

Imports of edible vegetable oils declined in 1978, mainly due to a decrease in palm oil imports. Animal fat imports were steady while marine oil imports increased slightly.

Imports of inedible oils and fats doubled to 9 870 tonnes, mainly animal oils.

##### Canadian Exports of Fats And Oils

Statistics Canada reported rapeseed oil exports in 1978 of 82 348. Industry sources state that this figure is approximately 50 000 tonnes too low i.e. actual exports were about 130 000 tonnes.

Rapeseed oil and inedible tallow were the only significant export items in this sector.

##### Canadian Crashings of Oilseeds And Production of Oil And Meal By Crop Year

The volume of rapeseed crushed in 1977/78 increased by 15 per cent to 630 300 tonnes. The soybean crush volume increased by 6 per cent to 728 400 tonnes. Data on flaxseed and sunflowerseed crashings is not available.

Table 4

## CANADIAN OILSEEDS: AREA, YIELD, PRODUCTION

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	
		(Thousands of Hectares)					(Yield Per Hectare, Kilograms)				
Flaxseed	587	567	324	596	518	599	788	857	1 091	1 040	
Rapeseed	1 279	1 628	720	1 453	2 806	907	1 002	1 165	1 359	1 201	
Soybeans	168	158	153	202	263	1 662	2 318	1 628	2 546	1 802	
Mustardseed	142	66	32	74	98	817	746	983	1 058	1 036	
Sunflowerseed	9	25	20	68	87	954	1 172	1 166	1 167	1 290	
		<u>Production</u>					<u>Oil Equivalent</u>				
		(Tonnes)					(Tonnes)				
Flaxseed	350 538	444 613	276 900	650 300	538 500	124 091	157 361	105 209	230 206	190 629	
Rapeseed	1 163 476	1 723 668	836 900	1 973 100	3 349 700	487 496	722 217	350 661	826 729	1 403 524	
Soybeans	280 045	366 808	250 400	517 100	475 134	50 408	66 025	45 072	93 078	85 524	
Mustardseed	117 935	50 122	35 200	79 380	103 420	-	-	-	-	-	
Sunflowerseed	8 255	29 937	24 000	80 967	113 853	3 302	11 975	9 600	32 387	45 541	

Oil Conversion Factors: Flaxseed..... 35.4%  
 Rapeseed..... 41.9%  
 Soybeans..... 18.0%  
 Sunflowerseed..... 40.0%  
 Mustardseed..... Not Applicable

SOURCE: Statistics Canada, Catalogues # 22-002; 22007.

Table 5

## CANADIAN OILSEED PRODUCTION BY PROVINCE

	A R E A			YIELD PER ACRE			P R O D U C T I O N		
	(Thousand Hectares)			(Bushels)			(Tonnes)		
	1976	1977	1978	1976	1977	1978	1976	1977	1978
<u>FLAXSEED</u>									
Manitoba	212	304	304	12.0	17.3	16.7	160 028	330 217	317 517
Saskatchewan	81	243	182	17.0	17.8	17.8	86 400	271 794	203 211
Alberta	30	49	32	16.0	15.8	18.8	30 500	48 263	38 102
<u>RAPESEED</u>									
Manitoba	101	202	425	18.0	25.6	24.3	102 059	290 302	578 336
Saskatchewan	304	587	1 133	22.8	25.5	22.9	387 800	839 155	1 451 510
Alberta	304	627	1 170	19.7	22.9	21.0	335 700	805 135	1 383 471
British Columbia	11	36	73	17.9	18.9	15.0	11 300	38 556	61 236
<u>SOYBEANS</u>									
Ontario	153	202	263	24.3	38.8	26.9	251 741	527 366	475 138
<u>SUNFLOWERSEED</u>									
Manitoba	20	67	82	1 060	1 061	1 182	24 047	79 379	108 863
<u>MUSTARDSEED</u>									
Manitoba	7	16	25	800	900	1 032	6 500	16 330	29 030
Saskatchewan	19	40	53	894	1 050	854	19 000	47 628	50 349
Alberta	9	17	20	973	810	1 060	9 700	15 422	24 041

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 6

CANADIAN IMPORTS OF FATS AND OILS

(Tonnes)

PRIMARILY EDIBLE

<u>Vegetable Oils</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Soybean Oil	33 614	20 881	31 205	28 138	28 069
Cottonseed Oil	11 333	11 289	5 200	5 497	4 723
Corn Oil	10 358	10 172	16 418	15 482	19 707
Peanut Oil	5 519	6 848	6 734	6 845	6 460
Coconut Oil	21 956	25 816	29 647	24 218	22 313
Palm Oil	16 199	41 283	55 001	31 179	23 205
Palm Kernel Oil	4 376	5 093	10 351	7 192	7 252
Olive Oil	2 408	1 987	5 096	4 840	2 814
Cocoa Butter	5 378	4 362	5 008	4 835	3 562
Sunflowerseed Oil	186	170	271	59	171
Vegetable Oils & Fats NES	5 973	2 965	3 156	2 270	3 235
Vegetable Cooking Fats & Packaged Salad Oils	1 461	693	144	423	163
<b>TOTAL</b>	<b>118 766</b>	<b>131 559</b>	<b>168 231</b>	<b>130 978</b>	<b>121 674</b>
<u>Animal Fats</u>					
Lard	17 680	12 118	19 246	17 841	13 106
Butter <sup>1/</sup>	19 754	4 565	12	13	4 165
<b>TOTAL</b>	<b>37 435</b>	<b>16 683</b>	<b>19 258</b>	<b>17 854</b>	<b>17 271</b>
<u>Marine Oils</u>					
Fish & Marine Oil	849	879	299	410	654
<b>TOTAL</b>	<b>849</b>	<b>879</b>	<b>299</b>	<b>410</b>	<b>654</b>
<b>TOTAL EDIBLE OILS &amp; FATS</b>	<b>157 050</b>	<b>149 121</b>	<b>187 788</b>	<b>149 242</b>	<b>139 599</b>

<u>PRIMARILY INEDIBLE</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Castor Oil	1 850	1 909	1 313	1 311	1 684
Tung Oil	425	692	734	699	680
Inedible Tallow <sup>2/</sup>	3 509	1 668	832	590	398
Animal Oil & Fats	808	487	652	568	4 810
Animal Grease <sup>3/</sup>	2 612	4 154	1 700	1 790	2 298
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL INEDIBLE OILS & FATS	9 205	8 910	5 231	4 958	9 870
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL EDIBLE & INEDIBLE FATS & OILS IMPORTS	166 256	158 031	194 332	154 200	149 469
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

<sup>1/</sup> Butter imports have been converted to oil equivalent, using the factor of 81%.

<sup>2/</sup> This class includes both edible and inedible tallow. The proportions are not known.

<sup>3/</sup> This category includes Animal Grease, NES and Wool Grease and Lanolin.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 7

CANADIAN EXPORTS OF FATS AND OILS

(Tonnes)

PRIMARILY EDIBLE

<u>Vegetable Oils</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Soybean Oil	8 148	2 074	--	23	1 406
Rapeseed Oil	27 669	19 811	42 501	102 700	82 348
Margarine & Shortening	352	268	706	634	1 559
Vegetable Oil & Fats	763	944	6 974	1 413	3 512
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
TOTAL	36 932	23 097	50 181	104 770	88 825
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

Animal Fats

Butter (Oil Equiv.) <sup>1/</sup>	3	23	2 861	273	189
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
TOTAL	3	23	2 861	273	189
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

Marine Oils

Herring Oil	5 524	2 277	5 315	4 124	3 679
Whale Oil	--	--	5	14	11
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
TOTAL	5 524	2 277	5 320	4 138	3 690
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

PRIMARILY INEDIBLE

Linseed Oil	592	3 562	5 108	5 717	8 099
Inedible Tallow <sup>2/</sup>	98 740	97 871	109 884	140 829	138 053
Marine Oils <sup>3/</sup>	2 338	2 615	4 789	11 902	5 707
Animal Fats & Oils	2 718	1 463	3 282	6 931	5 062
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

TOTAL INEDIBLE FATS AND OILS	104 388	105 511	123 063	165 379	156 921
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

TOTAL EDIBLE & <u>INEDIBLE FATS &amp; OILS</u>	146 847	130 900	181 425	274 560	249 625
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>



FOOTNOTES TO  
CANADIAN EXPORTS OF FATS AND OILS

- <sup>1/</sup> Butter exports have been converted to oil equivalent, using the factor of 81%.
- <sup>2/</sup> This class includes both edible and inedible tallow. The proportions are not known.
- <sup>3/</sup> Marine oil exports listed under "Inedible Oils" include sun-rotted cod liver oil, a non-specified group of fish and marine oil, and fish liver and visceral oils. While most of these oils can be assumed to be of an inedible grade, a small quantity of edible soy may have been included.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 8

CANADIAN CRUSHINGS OF VEGETABLE OILSEEDS AND  
PRODUCTION OF OIL AND MEAL BY CROP YEAR

(Tonnes)

<u>CRUSHINGS</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
Flaxseed	19 346	$\frac{1}{x-}$	$\frac{1}{x-}$	$\frac{1}{x-}$	$\frac{1}{x-}$
Rapeseed	334 414	275 973	347 161	549 714	630 300
Soybeans	642 310	635 110	722 988	684 995	728 400
Sunflowerseed	28 212	7 134	20 029	$\frac{1}{x-}$	$\frac{1}{x-}$
TOTAL	<u>1 024 282</u>	<u>918 217</u>	<u>1 090 178</u>	<u>1 234 709</u>	<u>1 358 700</u>
<u>OIL PRODUCTION</u>					
Flaxseed	6 601	$\frac{1}{x-}$	$\frac{1}{x-}$	$\frac{1}{x-}$	$\frac{1}{x-}$
Rapeseed	125 631	108 483	141 698	225 805	259 000
Soybeans	109 169	108 344	122 694	115 616	125 600
Sunflowerseed	11 234	2 671	8 328	$\frac{1}{x-}$	$\frac{1}{x-}$
TOTAL	<u>252 635</u>	<u>219 498</u>	<u>272 720</u>	<u>341 421</u>	<u>384 600</u>
<u>MEAL PRODUCTION</u>					
Flaxseed	11 932	$\frac{1}{x-}$	$\frac{1}{x-}$	$\frac{1}{x-}$	$\frac{1}{x-}$
Rapeseed	193 932	157 763	197 376	314 903	357 500
Soybeans	503 368	499 183	569 467	540 689	575 400
Sunflowerseed	10 558	2 553	7 266	$\frac{1}{x-}$	$\frac{1}{x-}$
TOTAL	<u>719 790</u>	<u>659 499</u>	<u>774 109</u>	<u>855 592</u>	<u>932 900</u>

$\frac{1}{x-}$  Confidential - to meet secrecy requirements of the Statistics Act.

SOURCE: Statistics Canada, Catalogue No. 22-007.

## CHAPTER 4

### THE CANADIAN RAPESEED SITUATION

#### Canadian Rapeseed Production

Production in crop year 1977/78 rebounded to nearly 2 million tonnes. Stocks on August 1, 1977 were extremely low due to a high level of exports and domestic crush during the 1976/77 crop year. A similar situation prevailed in the 1977/78 crop year, with exports exceeding 1 million tonnes and a domestic crush of 630 000 tonnes. In 1978, a further large increase in production occurred, to 3.35 million tonnes compared to 1.98 million tonnes in 1977. A further increase is anticipated in 1979, in response to favourable prices.

#### Exports of Rapeseed

In 1978, rapeseed exports increased by approximately 20 per cent to 1.2 million tonnes. Japan took over 800 000 tonnes, and India 207 000 tonnes.

#### Exports of Rapeseed Oil

The official Statistics Canada export figure of 82,348 tonnes is thought by exporters to be too low by some 45-50 000 tonnes. A review is being conducted and revised figures will appear in the 1979 edition.

#### Exports of Rapeseed Meal

Rapeseed meal exports increased substantially in 1978 to 170 990 tonnes. Western Europe and Japan were the principal market outlets. The growth in exports is due to increased crushing capacity in Western Canada, improved meal quality, and the depreciated Canadian dollar.

Table 9

CANADIAN SUPPLY AND DISPOSITION OF RAPESEED

RAPESEED OIL AND RAPESEED MEAL

(Crop Year)

<u>RAPESEED</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
	(Tonnes)				
Stocks, Starting	468 974	280 912	399 913	1 048 648	199 000
Production	1 206 568	1 163 476	1 748 616	836 886	1 973 100
Exports	888 664	592 987	683 026	1 017 871	1 013 600
Domestic Crashings	334 414	275 968	347 160	549 714	630 300
<u>RAPESEED OIL</u>					
Exports	34 488	19 240	32 633	91 648	73 500
Domestic Production	125 631	108 483	141 698	225 806	259 000
<u>RAPESEED MEAL</u>					
Exports	47 580	10 672	27 984	107 088	156 300
Domestic Production	193 932	157 763	197 376	314 903	357 500

SOURCE: Statistics Canada, Catalogue No. 22-006, 22-007.

Table 10

CANADIAN EXPORTS OF RAPESEED

(Tonnes)

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Algeria	--	--	--	38 266	74 498
Australia	14 739	--	--	5	--
Bangladesh	18 012	47 688	25 662	17 530	28 969
Belgium-Luxembourg	358	508	--	248	1 000
Brazil	12	--	--	27	1
Czechoslovakia	--	--	--	--	2 500
Denmark	--	--	--	18	73
Finland	--	--	103	82	116
France	--	--	--	1 519	755
Germany, West	23 418	5 651	15 058	66 843	50 364
India	4 521	14 142	--	13 650	207 013
Italy	896	2 008	2 956	1 930	--
Japan	493 947	579 385	687 076	746 082	801 229
Korea, South	--	--	7 268	--	162
Mexico	38 731	--	--	--	--
Mozambique	--	--	--	7 700	--
Netherlands	20 680	18 426	16 682	111 876	36 545
Norway	--	--	--	2 656	--
Singapore	--	--	--	12 887	--
Spain	--	919	4	70	253
Sweden	-- <sup>1/</sup>	56	211	104	1
Switzerland	--	3 953	--	--	2 794
United Kingdom	999	3 324	13 358	5 884	1 365
United States	104	123	6 491	563	466
Venezuela	--	9	--	--	27
Yugoslavia	--	--	--	3	1
TOTAL	615 975	676 199	774 873	1 027 943	1 208 132

<sup>1/</sup> Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 11

CANADIAN EXPORTS OF RAPESEED OIL

(Tonnes)

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Algeria	--	--	--	3 216	--
Australia	538	122	--	2 917	3 314
Bangladesh	--	--	5 542 <sup>3/</sup>	7 000	9 014
Chile	--	--	--	--	500
Ecuador	--	--	--	504 <sup>4/</sup>	--
Egypt	--	--	745	2 160 <sup>4/</sup>	--
Germany, West	--	--	--	2 217	--
Haiti	--	--	--	2 434	--
Hong Kong	--	590	2 069	5 133 <sup>5/</sup>	5 592 <sup>7/</sup>
India	13 237 <sup>1/</sup>	9 438 <sup>2/</sup>	23 248 <sup>3/</sup>	66 794 <sup>5/</sup>	45 994 <sup>7/</sup>
Japan	3 381	3 019	8 481	6 415	12 516
Khmer Rep.-Laos	--	--	--	-- <sup>6/</sup>	14
Lebanon	--	--	290	650 <sup>6/</sup>	--
Leeward-Windward Is.	--	--	--	-- <sup>7/</sup>	14
Madagascar	--	--	--	284 <sup>7/</sup>	--
Mexico	--	--	--	--	178
Morocco	--	--	--	--	2 818
Mozambique	--	--	--	--	515
Netherlands	--	3 202	--	--	--
New Zealand	--	--	--	--	118
Nicaragua	--	--	--	--	7
Portugal	--	--	--	123	--
South Korea	--	--	--	-- <sup>8/</sup>	104
Tunisia	--	--	--	131 <sup>8/</sup>	--
United Kingdom	1 240	2 476	--	--	--
United States	8 268	963	2 124	2 064	1 650
Viet Nam	--	--	--	728	--
Yemen	--	--	--	20	--
Zambia	1 002	--	--	--	--
 TOTAL	 27 669	 19 811	 42 501	 102 700	 82 348 <sup>9/</sup>
 TOTAL VALUE (\$'000)	 14 133	 15 683	 23 081	 61 907	 53 414

<sup>1/</sup> CIDA reports 13 694 tonnes shipped under bilateral food aid in the crop year 1973/74.

<sup>2/</sup> CIDA reports 7 364 tonnes shipped under bilateral food aid in the crop year 1974/75.

<sup>3/</sup> CIDA reports 17 455 tonnes shipped under bilateral food aid in the crop year 1975/76.



FOOTNOTES TO  
CANADIAN EXPORTS OF RAPESEED OIL

- 4/ CIDA reports 3 500 tonnes shipped under bilateral food aid in the crop year 1976/77.
- 5/ CIDA reports 35 081 tonnes shipped under bilateral food aid in the crop year 1977/78.
- 6/ CIDA reports 1 328 tonnes shipped under World Food Program in the crop year 1977/78.
- 7/ CIDA reports 491 tonnes shipped under World Food Program in the crop year 1977/78.
- 8/ CIDA reports 707 tonnes shipped under World Food Program in the crop year 1977/78.
- 9/ This figure is preliminary. Total exports in 1978 are estimated by industry to approximate 145 000 to 150 000 tonnes. Statistics Canada will publish the correct figure later in 1979.

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 12

CANADIAN EXPORTS OF RAPESEED OILCAKE AND MEAL

(Tonnes)

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
France	--	--	--	3 675	--
Cuba	--	--	--	1 005	--
Denmark	--	--	--	4 532	--
Germany, West	16	1 965	4 686	57 565	94 005
Ireland	--	--	--	1 000	--
Japan	--	--	121	4 001	11 822
Korea, South	--	--	--	--	--
Mexico	5 811	--	--	--	--
Netherlands	10 738	5 756	26 941	7 967	6 209
Norway	--	--	--	24 395	30 666
Philippines	609	--	--	--	--
Taiwan	--	--	--	2 051	5 699
United Kingdom	7 620	12 392	16 127	21 968	21 597
United States	5 840	552	3 696	8 232	992
TOTAL	<u>30 911</u>	<u>20 666</u>	<u>51 573</u>	<u>136 393</u>	<u>170 990</u>
TOTAL VALUE (\$'000)	<u>3 218</u>	<u>2 115</u>	<u>6 089</u>	<u>19 639</u>	<u>25 056</u>

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 13

QUALITY DATA FOR WESTERN CANADIAN RAPESEED  
SURVEY SAMPLES OF 1977 AND 1978 CROPS

WESTERN CANADA	1977 Survey				1978 Survey			
	Oil <sup>1/</sup> Content	Erucic Acid Content	Protein Content	No. of Samples	Oil <sup>1/</sup> Content	Erucic Acid Content	Protein <sup>2/</sup> Content	No. of Samples
No. 1 CRS	41.9	1.6	36.1	387	41.3	1.4	36.8	432
No. 2 CRS	41.9	1.5	38.2	54	41.1	0.9	38.8	51
No. 3 CRS	42.9	1.0	36.9	1	40.1	1.4	40.7	7
All Grades	41.9	1.6	36.4	443	41.3	1.3	37.1	490
ALL GRADES BY PROVINCE								
Manitoba	42.1	1.7	37.3	79	41.5	0.6	37.6	90
Saskatchewan	42.5	1.0	36.7	173	41.9	0.8	37.5	204
Alberta	41.4	2.1	35.7	191	40.5	2.2	36.4	196

1/ Oil content of seed is reported on an 8.5% moisture basis.

2/ Protein content is reported on the oil-free meal and an 8.5% moisture basis.

SOURCE: Canadian Grain Commission, Crop Bulletins Nos. 137 and 141.

Table 14

SUMMERFALLOW AND STUBBLE CULTIVATION OF RAPESEED

	<u>Summer- fallow</u>	<u>Stubble</u>	<u>Total</u>
<u>Seeded Area</u>	- hectares -		
1974	949 413	305 139	1 254 552
1975	1 282 881	437 070	1 719 951
1976	700 526	153 379	853 905
1977	978 146	438 284	1 425 430
1978	1 809 389	922 298	2 731 687
<u>Distribution</u>	- per cent -		
1974	76	24	100
1975	75	25	100
1976	78	22	100
1977	69	31	100
1978	66	34	100
<u>Average Yield Per Seeded Hectare</u>	- tonnes per hectare -		
1974	0.964	0.751	0.914
1975	1.065	0.824	1.003
1976	1.244	0.875	1.166
1977	1.451	1.171	1.368
1978	1.306	1.1 8	1.250
<u>Production</u>	- tonnes -		
1974	913 998	229 066	1 143 064
1975	1 363 059	360 609	1 723 668
1976	691 735	133 811	825 546
1977	1 422 027	512 565	1 934 592
1978	2 363 240	1 050 077	3 413 317

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 15

CANADIAN RAPESEED PRICES <sup>1/</sup>  
(Crop Year)

<u>M O N T H</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
	.....\$ per tonne.....				
August	286.60	362.00	293.65	232.37	264.11
September	236.55	375.44	262.35	246.03	277.56
October	217.81	421.30	235.01	226.19	285.50
November	212.74	397.71	218.26	255.73	270.95
December	250.00	358.03	194.45	242.07	270.72
January	288.80	322.75	199.30	254.85	281.31
February	311.29	281.75	206.35	347.44	281.31
March	298.94	273.37	205.25	313.94	292.33
April	268.52	283.51	201.06	365.08	347.08 <sup>2/</sup>
May	309.53	250.66	211.20	369.05	344.19
June	325.84	240.30	238.32	334.88	323.90
July	<u>350.97</u>	<u>259.04</u>	<u>255.95</u>	<u>279.98</u>	<u>287.16</u>
Yearly Average	<u>279.54</u>	<u>318.79</u>	<u>226.63</u>	<u>288.80</u>	<u>295.90</u>

<sup>1/</sup> Winnipeg Grain Exchange No. 1 Canadian Rapeseed,  
basis in-store Thunder Bay, \$/tonne

<sup>2/</sup> As of April 1, 1978, basis in-store Vancouver, \$/tonne

SOURCE: Statistics Canada, Catalogue Nos. 22-006 and 22-007.

## CHAPTER 5

### THE CANADIAN SOYBEAN SITUATION

#### Supply and Disposition

Canadian production of soybeans in 1978 was 475 134 tonnes versus 527 361 in 1977. Imports of beans rose slightly to 324,369 tonnes. For 1978, Canadian self-sufficiency in soybeans was approximately 60 per cent versus 62 per cent in 1977. This does not take into account the soybean equivalent of imported soybean oil and meal.

#### Exports of Soybeans

Soybeans exported in 1978 totalled 84 152 tonnes and were destined mainly for food use. This volume was a sharp increase over previous years.

#### Exports of Soybean Products

Oil exports were minimal at 1 406 tonnes. Meal exports, mainly to the United Kingdom, were 48 308 tonnes valued at \$12 436 000.



Table 16

CANADIAN SUPPLY AND DISPOSITION OF SOYBEANS,  
SOYBEAN OIL AND SOYBEAN MEAL  
 (Crop Year)

<u>SOYBEANS</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
	- Tonnes -				
Production	396 527	300 457	366 808	250 384	527 361
Imports	340 354	344 273	371 026	391 608	262 835
Exports	28 875	9 498	22 289	24 820	64 173
Domestic Crushings	642 309	635 096	722 975	684 995	728 400
<u>SOYBEAN OIL</u>					
Imports	33 395	19 557	30 810	26 704	28 100
Exports	4 942	5 587	1 043	--	1 400
Domestic Production	109 169	108 344	122 694	115 616	125 600
<u>SOYBEAN MEAL</u>					
Imports	232 974	271 149	343 814	339 244	376 300
Exports	94 087	83 527	69 335	51 333	45 600
Domestic Production	503 368	499 183	569 467	540 689	575 400

SOURCE: Statistics Canada, Catalogue Nos. 22-006, 22-007  
 and unpublished data.

Table 17

CANADIAN IMPORTS OF SOYBEAN AND SOYBEAN OIL

Soybeans  
- Tonnes -

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Germany, West	2	1	--	--	--
Hong Kong	<u>1/</u>	3	17	6	17
Japan	2	4	--	8	--
People's Republic of China	20	13	--	9	57
Singapore	--	--	--	4	2
Sweden	--	--	--	<u>1/</u>	--
United Kingdom	--	--	--	8	--
United States	<u>390 756</u>	<u>385 444</u>	<u>397 560</u>	<u>317 935</u>	<u>324 369</u>
TOTAL	<u>380 781</u>	<u>385 465</u>	<u>397 577</u>	<u>317 970</u>	<u>324 445</u>
TOTAL VALUE (\$'000)	<u>90 505</u>	<u>86 210</u>	<u>81 136</u>	<u>98 953</u>	<u>91 245</u>

Soybean Oil

- Tonnes -

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
France	<u>1/</u>	1	--	--	--
United States	<u>33 614</u>	<u>20 881</u>	<u>31 205</u>	<u>28 138</u>	<u>28 069</u>
TOTAL	<u>33 614</u>	<u>20 882</u>	<u>31 205</u>	<u>28 138</u>	<u>28 069</u>
TOTAL VALUE (\$'000)	<u>24 829</u>	<u>14 394</u>	<u>14 223</u>	<u>17 216</u>	<u>19 070</u>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 18

## IMPORTS OF SOYBEAN OIL BY PROVINCE

	1 9 7 4		1 9 7 5		1 9 7 6		1 9 7 7		1 9 7 8	
	Tonnes	'000 of \$	Tonnes	'000 of \$	Tonnes	'000 of \$	Tonnes	'000 of \$	Tonnes	'000 of \$
Nova Scotia	--	--	1	1/	10	6	--	--	--	--
New Brunswick	1 366	1 033	1 614	1 267	1 036	545	1 199	791	1 773	1 351
Quebec	5 897	3 871	1 490	822	2 056	788	436	282	936	752
Ontario	16 913	13 143	11 681	8 196	17 767	8 396	16 367	10 321	14 796	10 156
Manitoba	4 458	3 184	2 752	1 572	4 646	1 865	4 160	2 191	2 563	1 585
Saskatchewan	95	73	250	155	225	100	490	264	157	104
Alberta	970	599	343	236	1 931	734	3 246	1 896	5 489	3 526
British Columbia	3 912	2 922	2 747	2 142	3 532	1 783	2 238	1 468	2 355	1 596
TOTAL	33 613	24 825	20 881	14 394	31 205	14 222	28 137	17 216	28 069	19 070

1/ Less than \$1,000.

SOURCE: Statistics Canada, Unpublished Data.

Table 19

## IMPORTS OF SOYBEAN MEAL BY PROVINCE

	1 9 7 4		1 9 7 5		1 9 7 6		1 9 7 7		1 9 7 8	
	Tonnes	'000 of \$	Tonnes	'000 of \$	Tonnes	'000 of \$	Tonnes	'000 of \$	Tonnes	'000 of \$
Newfoundland	--	--	129	18	--	--	--	--	--	--
Nova Scotia	133	29	3 288	521	19	3	2 913	679	130	32
New Brunswick	72	13	129	18	5 569	1 369	7 797	2 418	9 729	2 998
Quebec	65 673	10 399	91 146	20 062	118 447	25 368	99 456	26 329	103 390	28 260
Ontario	57 704	10 897	49 312	8 574	57 881	12 891	84 149	21 713	114 857	28 222
Manitoba	77 965	14 627	63 070	9 975	69 789	12 250	68 543	16 507	86 357	19 517
Saskatchewan	19 672	3 975	17 808	3 134	16 740	3 227	20 127	5 235	20 806	5 022
Alberta	27 025	5 108	37 904	6 273	42 521	7 120	38 634	9 564	46 306	11 501
British Columbia	29 192	5 865	31 554	5 622	37 896	7 810	29 681	7 861	31 083	7 501
TOTAL	277 438	50 853	294 343	54 209	348 865	70 042	351 302	90 310	412 656	103 093

SOURCE: Statistics Canada, Unpublished Data.

Table 20  
CANADIAN EXPORTS OF SOYBEANS  
(Tonnes)

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Bangladesh	-	-	-	-	82
Belgium-Luxembourg	2 000	-	-	-	-
Denmark	-	-	-	-	18
France	63	490	73	75	8 749
Germany, West	561	225	10	-	-
Hong Kong	957	2 192	5 111	6 502	14 291
Hungary	-	-	-	3	-
Jamaica	3	4	-	-	-
Japan	3 830	3 041	6 825	10 976	34 940
Malaysia	-	-	209	227	1 744
Netherlands	18	-	-	3,941	5 463
Philippines	-	-	125	-	-
Romania	-	-	-	1 008	-
Singapore	-	1 020	9 667	2 950	13 027
Spain	-	213	-	8 885	-
Sweden	1 356	-	-	-	-
Switzerland	91	-	-	-	-
Taiwan	-	-	-	397	-
United Kingdom	4 162	30	80	246	-
United States	22	46	351	94	30
Yugoslavia	-	160	-	-	-
Other Countries <sup>1/</sup>	-	-	2 199	2 533	5 808
<b>TOTAL</b>	<b>13 066</b>	<b>8 710</b>	<b>24 653</b>	<b>37 837</b>	<b>84 152</b>
<b>TOTAL VALUE (\$'000)</b>	<b>3 451</b>	<b>2 812</b>	<b>6 100</b>	<b>11 047</b>	<b>24 375</b>

<sup>1/</sup> To protect confidentiality under the Statistics Act

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 21

CANADIAN EXPORTS OF SOYBEAN OIL AND MEAL

(Tonnes)

SOYBEAN OIL

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Bahamas	--	--	--	--	--
Germany, West	--	14	--	--	--
Jamaica	--	4	--	--	--
Leeward-Windward Islands	1	1	--	--	--
Netherlands	--	--	--	--	1 406
United Kingdom	7 778	1 965	--	--	--
United States	368	92	--	23	--
TOTAL	<u>8 148</u>	<u>2 076</u>	<u>--</u>	<u>23</u>	<u>1 406</u>
TOTAL VALUE (\$'000)	<u>5 663</u>	<u>1 391</u>	<u>--</u>	<u>12</u>	<u>742</u>

SOYBEAN MEAL

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Belgium-Luxembourg	--	--	--	--	--
Denmark	--	--	--	6 748	2 956
Germany, West	--	--	28	3 790	--
Guyana	--	--	3	--	--
Hong Kong	--	--	--	--	800
Ireland	3 789	--	2 039	--	--
Netherlands	--	--	--	--	1 001
Trinidad-Tobago	--	--	--	--	--
United Kingdom	101 984	57 269	59 653	34 333	41 929
United States	9 420	1 723	987	718	1 622
TOTAL	<u>115 195</u>	<u>58 993</u>	<u>62 711</u>	<u>45 589</u>	<u>48 308</u>
TOTAL VALUE (\$'000)	<u>17 547</u>	<u>9 435</u>	<u>11 272</u>	<u>10 747</u>	<u>12 436</u>

SOURCE: Statistics Canada, Catalogue No. 65-004



Table 22  
CANADIAN SOYBEAN PRICES <sup>1/</sup>  
(Crop Year)

<u>M O N T H</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
	.....\$ per tonne.....				
August	382.13	263.17	219.22	211.96	207.49
September	222.30	267.03	200.48	227.76	185.75
October	204.59	298.17	175.40	211.09	187.44
November	203.33	265.93	159.83	221.38	211.87
December	214.53	249.21	154.60	243.97	215.77
January	221.28	217.06	160.34	248.43	209.99
February	236.67	186.01	162.36	260.69	205.98
March	224.22	185.28	160.98	304.65	243.13
April	199.61	193.77	160.84	344.51	259.88
May	190.01	177.10	176.83	347.45	273.40
June	185.46	179.40	214.03	298.82	266.61
July	235.94	199.47	224.68	224.82	256.72
Yearly Average	<u>226.52</u>	<u>223.49</u>	<u>180.82</u>	<u>262.25</u>	<u>226.98</u>

<sup>1/</sup> Buying prices, carlots, fob Chatham, No.2 and better.

SOURCE: Statistics Canada, Catalogue No. 22-006.

## CHAPTER 6

### THE CANADIAN FLAXSEED SITUATION

#### Flaxseed Production

Production in 1978 fell slightly to 558 829 tonnes versus 609 632 in 1977; average yield rose but the seeded area declined.

#### Exports of Flaxseed

The volume exported in 1978 was 409 417 tonnes, up 24 per cent from 1977. The value of these exports increased by about 10 per cent. Japan and Europe were the principal markets. A sizeable proportion of the flaxseed imported by Western Europe is transhipped to Eastern European countries.

#### Exports of Linseed Oil And Meal

Exports of linseed oil increased to 8 099 tonnes in 1978, mainly to Europe. Linseed meal exports were 5 583, valued at \$1 087 000.

Table 23

CANADIAN SUPPLY AND DISPOSITION OF FLAXSEED,  
LINSEED OIL AND LINSEED MEAL

(Crop Year)

	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
	- tonnes -				
<u>FLAXSEED</u>					
Stocks, Starting <sup>1/</sup>	194 904	200 950	218 578	380 640	280 400
Production	492 786	350 538	444 523	276 875	402 400
Imports	431	406	--	<u>3/</u>	<u>3/</u>
Exports	393 797	267 196	195 107	332 708	337 500
Domestic Crushing	19 355	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>
<u>LINSEED OIL</u>					
Exports	2 230	2 184	5 817	4 525	4 597
Domestic Production	6 601	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>
<u>LINSEED MEAL</u>					
Exports	24	196	636	3 679	2 015
Domestic Production	11 932	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>	x <sup>2/</sup>

<sup>1/</sup> Total stocks in all positions.

<sup>2/</sup> Confidential - to meet secrecy requirements of the Statistics Act.

<sup>3/</sup> Less than one tonne.

Table 24

CANADIAN EXPORTS OF FLAXSEED

(Tonnes)

<u>DESTINATION</u>	<u>1 9 7 4</u>	<u>1 9 7 5</u>	<u>1 9 7 6</u>	<u>1 9 7 7</u>	<u>1 9 7 8</u>
Australia	5 633	--	--	--	--
Austria	--	34	36	--	--
Belgium-Luxembourg	7 477	2 951	1 763	11 658	20 209
Czechoslovakia	25 004	17 717	3 151	5 836	--
Denmark	--	--	--	614	4 849
Finland	--	--	--	6	--
France	5 202	1 848	508	6 722	17 427
Germany, East	3 860	--	--	--	--
Germany, West	110 680	77 619	81 224	117 479	140 737
Greece	2 184	1 050	1 500	--	--
Italy	--	--	--	--	--
Japan	77 027	65 330	90 647	78 984	100 863
Korea, North	--	--	--	269	--
Korea, South	--	--	1 750	3 373	3 934
Netherlands	41 289	31 516	11 078	25 799	14 800
New Zealand	2 199	--	--	--	--
Panama	--	2 117	--	102	--
Poland	23 263	18 926	--	--	--
Spain	6 500	6 580	8 547	11 315	4 329
Sweden	--	72	54	2 279	206
Switzerland	1 237	108	1 468	9 020	1 118
Taiwan	--	--	--	911	6 217
Trinidad-Tobago	--	2	--	--	--
United Kingdom	31 337	15 573	4 672	13 892	11 724
United States	12 659	3 493	40 198	41 107	23 427
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	351 031	244 942	246 602	329 366	409 417
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	148 631	83 815	66 278	93 538	102 424
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 25

CANADIAN IMPORTS OF FLAXSEED  
(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
United Kingdom	--	--	--	18	--
United States	451	337	<u>1/</u>	51	26
	—	—	—	—	—
TOTAL	451	337	<u>1/</u>	69	26
	—	—	—	—	—
TOTAL VALUE (\$'000)	333	171	--	45	10
	—	—	—	—	—

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 26  
CANADIAN EXPORTS OF LINSEED OIL  
(Tonnes)

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Belgium-Luxembourg	--	1 526	1 965	1 717	1 811
Bermuda	--	1	1	--	--
Ecuador	--	--	--	--	--
French West Indies	--	--	<u>1/</u>	--	--
Jamaica	--	<u>1/</u>	--	--	--
Leeward-Windward Is.	--	--	--	1	--
Liberia	2	2	--	--	--
Netherlands	--	1 590	2 848	1 724	1 524
Nigeria	--	--	--	--	--
United Kingdom	581	398	250	2 241	2 944
United States	--	36	34	27	29
Venezuela	8	7	8	7	20
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	592	3 562	5 108	5 717	8 099
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	655	3 237	2 758	2 786	3 390
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one metric ton

SOURCE: Statistics Canada, Catalogue No. 65-004.



Table 27

CANADIAN EXPORTS OF LINSEED CAKE AND MEAL

(Tonnes)

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Belgium-Luxembourg	--	--	481	--	--
Germany, West	--	--	3 150	--	--
Leeward-Windward Is.	--	--	--	4	--
Netherlands	--	--	--	3 201	3 187
Sweden	--	--	22	--	--
Trinidad-Tobago	49	114	60	91	26
United Kingdom	--	--	--	--	--
United States	64	80	159	1 430	2 370
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	114	194	3 875	4 726	5 583
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	24	37	835	741	1 087
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-004.

QUALITY DATA FOR WESTERN CANADIAN FLAXSEED, SURVEY SAMPLES OF 1976, 1977 AND 1978 CROPS

	Oil Content <u>1/</u>			Iodine Value			Protein Content <u>2/</u>			No. of Samples		
	1976	1977	1978	1976	1977	1978	1976	1977	1978	1976	1977	1978
WESTERN CANADA												
No. 1 CW	43.0	44.2	43.7	192	195	190	41.1	40.6	41.2	289	215	237
No. 2 CW	43.8	44.4	43.1	193	199	191	43.3	39.7	40.1	4	40	16
No. 3 CW	--	44.7	41.6	--	201	188	--	40.1	40.8	--	27	2
No. 4 CW	--	46.2	--	--	199	--	--	40.2	--	--	5	--
All Grades	43.0	44.3	43.6	192	196	190	41.1	40.4	41.1	293	289	255
ALL GRADES												
Manitoba	43.0	44.5	43.5	192	197	190	41.8	40.1	40.8	161	156	132
Saskatchewan	42.9	44.2	43.8	192	196	190	39.7	40.4	41.3	94	118	104
Alberta	43.2	43.0	43.4	194	190	192	41.7	44.2	42.7	38	15	19

1/ Oil Content of seed is reported on moisture-free basis.

2/ Protein Content is reported on oil-free meal and moisture-free basis.

SOURCE: Canadian Grain Commission, Crop Bulletin Nos. 133 and 137.

Table 29

SUMMERFALLOW AND STUBBLE CULTIVATION OF FLAXSEED

<u>Seeded Area</u>	<u>Summer- fallow</u>	<u>Stubble</u>	<u>Total</u>
		- hectares -	
1974	295 831	290 975	586 806
1975	266 289	300 283	566 672
1976	124 646	199 110	323 756
1977	241 198	333 468	574 666
1978	180 089	337 920	518 009
<hr/>			
<u>Distribution</u>		- per cent -	
1974	50	50	100
1975	47	53	100
1976	38	62	100
1977	42	58	100
1978	35	65	100
<hr/>			
<u>Average Yield</u>		- kg. per hectare -	
1974	660	534	597
1975	918	666	786
1976	1 018	754	855
1977	1 201	962	1 063
1978	1 232	1 000	1 082
<hr/>			
<u>Production</u>		- tonnes -	
1974	195 590	154 948	350 538
1975	243 852	200 670	444 523
1976	127 006	149 868	276 874
1977	289 575	320 056	609 632
1978	220 992	337 837	558 829

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 30

CANADIAN FLAXSEED PRICES <sup>1/</sup>  
(Crop Year)

<u>M O N T H</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
	.....\$ per tonne.....				
August	345.99	432.99	336.35	281.18	213.77
September	348.70	461.39	311.00	282.56	218.30
October	353.82	479.95	284.34	274.94	220.17
November	401.01	430.78	258.20	265.83	218.34
December	417.55	420.69	247.48	262.38	209.83
January	442.00	363.17	258.65	273.85	205.30
February	459.42	319.12	257.17	281.83	209.44
March	435.80	308.69	254.32	291.52	230.74
April	380.84	339.10	249.59	333.10	249.53
May	390.43	325.08	258.99	302.69	258.84
June	385.65	307.02	280.84	219.62	249.81
July	431.18	320.95	292.40	242.61	231.02
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Yearly Average	399.39	375.67	274.15	276.31	225.97
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

<sup>1/</sup> Winnipeg Grain Exchange No. 1 C.W. Flaxseed Basis Thunder Bay.

SOURCE: Statistics Canada, Catalogue Nos. 22-006 - 22-007.

## CHAPTER 7

### THE CANADIAN SUNFLOWERSEED SITUATION

#### Production

Manitoba continues to account for 95% of total sunflowerseed production in Canada. Output in 1978 rose to 113 853 tonnes, of which Manitoba produced 108 863 tonnes.

#### Canadian Exports of Sunflowerseed

Exports of unprocessed sunflowerseed increased sharply to 74 119 tonnes, compared to 26 103 tonnes in 1977. West Germany, the Netherlands and the United States were the principal markets. The total value of sunflowerseed exported was \$21 675 000 in 1978.

Table 31

CANADIAN SUNFLOWERSEED: ACREAGE, YIELD AND PRODUCTION

(Crop Year)

	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
(Thousands of Acres)					
Manitoba	30.0	62.0	50.0	165.0	203.0
Saskatchewan	--	--	--	--	11.0
Alberta	--	--	--	--	--
Canada, Total	30.0	62.0	50.0	165.0	214.0
(Yield Per Acre, Pounds)					
Manitoba	867	1 065	1 060	1 061	1 182
Saskatchewan	--	--	--	--	1 000
Alberta	--	--	--	--	--
Canada	867	1 065	1 060	1 061	1 173
(Production - Tonnes)					
Manitoba	8 255	29 945	24 047	79 379	108 863
Saskatchewan	--	--	--	--	4 990
Alberta	--	--	--	--	--
Canada, Total	8 255	29 937	24 047	79 379	113 853

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 32

CANADIAN EXPORTS OF SUNFLOWERSEED

(Tonnes)

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Algeria	--	--	--	1 050	--
Australia	--	--	17	15	37
Bangladesh	2	--	2	--	--
Czechoslovakia	6 877	--	1 604	6 998	--
Denmark	--	--	18	--	14
Germany, West	7 244	3 825	3 590	344	43 607
Mexico	--	--	--	434	--
Netherlands	5 703	--	3 001	14 284	17 999
New Zealand	<u>1/</u>	2	<u>1/</u>	5	2
Portugal	36	2 701	--	--	--
Spain	--	526	--	--	40
Sweden	<u>1/</u>	2	4	5	72
United Kingdom	31	34	25	19	340
United States	1 250	874	1 238	2 949	3 913
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	21 169	7 965	9 501	26 103	74 119
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	7 334	2 623	3 258	6 225	21 675
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne

SOURCE: Statistics Canada, Catalogue No. 65-004.



Table 33

CANADIAN IMPORTS OF SUNFLOWERSEED OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Belgium-Luxembourg	--	--	--	--	7
Austria	3	5	--	--	--
France	2	1	--	--	--
United States	178	160	271	59	164
U.S.S.R.	1	4	--	--	--
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	186	170	271	59	171
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	181	158	147	43	136
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

## CHAPTER 8

### THE CANADIAN MUSTARDSEED SITUATION

#### Canadian Mustardseed Production and Trade

Canada is a leading producer and exporter of mustardseed. Production in 1978 increased to 103 448 tonnes, from 97 936 hectares.

Main export destinations were Western Europe, Japan and the United States. A total of 73 339 tonnes of mustardseed was exported, with a value of \$25 208 000.

#### Imports of Ground Mustard

The United Kingdom supplied approximately 75 per cent of the ground mustard imported into Canada in 1978. This type of dry mustard serves a particular market; the bulk of the Canadian mustard is consumed in a liquid rather than dry form.

Table 34

CANADIAN MUSTARDSEED: ACREAGE, YIELD AND PRODUCTION

(Crop Year)

	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
	- hectares -				
Manitoba	16 188	9 308	7 285	16 188	25 091
Saskatchewan	80 939	30 757	19 020	40 469	52 601
Alberta	44 516	25 911	8 903	16 997	20 234
Canada - Total	141 643	65 965	35 208	73 654	97 936
	- yield - kilograms/hectare -				
Manitoba	842	708	899	1 011	1 159
Saskatchewan	842	739	1 004	1 179	959
Alberta	817	808	1 093	910	1 191
Canada - Total	835	762	1 004	1 081	1 056
	- production - tonnes -				
Manitoba	13 608	6 578	6 531	16 329	29 038
Saskatchewan	68 039	22 679	19 051	47 627	50 363
Alberta	36 287	20 865	9 707	15 422	24 047
Canada - Total	117 935	50 121	35 289	79 378	103 448

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 35

CANADIAN EXPORTS OF MUSTARDSEED

(Tonnes)

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Australia	65	--	--	22	6
Belgium-Luxembourg	6 292	114	574	435	--
Costa Rica	4	15	17	--	--
Czechoslovakia	--	108	35	--	308
France	129	290	181	--	--
Germany, West	2 165	3 483	2 613	2 157	7 622
Guatemala	1	--	--	--	--
India	--	--	--	--	2 958
Japan	7 565	9 058	7 517	7 024	6 701
Mexico	281	272	108	196	429
Netherlands	18 048	11 057	9 114	14 138	25 435
Philippines	--	4	4	7	9
South Africa	--	--	--	21	--
Spain	--	17	40	--	--
Sweden	54	54	54	--	34
Switzerland	94	430	--	1 108	--
United Kingdom	637	1 253	85	18	171
United States	33 460	31 659	38 526	31 312	29 378
Venezuela	22	24	--	--	32
TOTAL	68 925	57 841	58 871	56 438	73 339
TOTAL VALUE (\$'000)	21 171	22 939	20 946	19 660	25 208

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 36

CANADIAN IMPORTS OF GROUND MUSTARD

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
France	--	4	--	9	20
Germany, West	<u>1/</u>	2	--	--	--
Hong Kong	<u>1/</u>	<u>1/</u>	--	<u>1/</u>	--
India	--	<u>1/</u>	--	--	--
Japan	<u>1/</u>	<u>1/</u>	--	--	--
People's Republic of China	3	--	--	--	--
Taiwan	--	2	--	--	--
United Kingdom	306	317	169	241	220
United States	<u>56</u>	<u>65</u>	<u>99</u>	<u>98</u>	<u>43</u>
TOTAL	<u>368</u>	<u>393</u>	<u>269</u>	<u>349</u>	<u>284</u>
TOTAL VALUE (\$'000)	<u>424</u>	<u>522</u>	<u>358</u>	<u>548</u>	<u>625</u>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

## CHAPTER 9

### DEODORIZED FATS AND OILS

Production of deodorized fats and oils in 1978 increased only slightly over 1977. Shortening oil increased while production of margarine oil and salad oil declined. Vegetable oils in 1978 accounted for 89 per cent of total deodorized fats and oils produced.

Imports of vegetable oils and fats (NES) increased by 42 per cent to 3 235 tonnes in 1978, mainly from the United States.

Imports of cocoa butter, coconut oil, cottonseed oil, olive oil, palm oil, and peanut oil were down slightly from 1977 levels, in part reflecting a depreciated Canadian dollar and short supplies. Imports of corn oil and palm kernel oil increased slightly.

Canadian exports of vegetable oil and fats (NES) increased to 3 512 tonnes versus 1 413 tonnes in 1977.

Table 37

## CANADIAN PRODUCTION OF DEODORIZED FATS AND OILS

(Tonnes)

	1 9 7 7				1 9 7 8			
<u>Vegetable Oils</u>	Margarine Oil	Shortening Oil	Salad Oil	Total	Margarine Oil	Shortening Oil	Salad Oil	Total
Coconut	X	X	X	18 447	X	X	X	15 871
Corn	X	X	X	21 263	X	X	X	24 872
Cottonseed	X	X	X	3 301	X	X	X	X
Palm	X	24 165	X	28 904	X	X	X	16 482
Palm Kernel	X	X	X	6 052	X	X	-	X
Peanut	X	X	X	6 567	4	X	X	5 940
Rapeseed	34 919	32 683	53 392	120 994	39 825	35 693	55 924	131 442
Soybean	53 336	42 634	20 334	116 304	53 808	47 126	X	116 712
Sunflowerseed	X	X	X	10 727	X	2 778	X	14 417
Other Vegetable	X	X	X	650	X	X	-	X
TOTAL VEGETABLE OILS	102 778	128 971	101 460	333 209	111 361	123 377	99 559	334 297
<u>Marine Oils</u>								
Herring	X	X	-	X	X	X	-	X
Seal	X	X	-	76	-	-	-	-
Whale	-	-	-	-	X	X	-	X
Other Marine	X	X	-	X	X	X	-	X
TOTAL MARINE OILS	-	-	-	76	X	X	-	X
<u>Animal Fats</u>								
Lard	X	X	-	X	X	X	-	X
Oleo, All Types	-	X	-	X	-	X	-	X
Tallow, Edible	X	X	-	X	X	X	-	X
TOTAL ANIMAL FATS	X	X	-	X	X	X	-	X
TOTAL ALL FATS & OILS	104 971	163 375	101 460	369 806	113 824	161 496	99 559	374 879



FOOTNOTES TO

CANADIAN PRODUCTION OF DEODORIZED FATS AND OILS

X Confidential to meet secrecy requirements of  
the Statistics Act

SOURCE: Statistics Canada, Catalogue No. 32-006.

Table 38

CANADIAN IMPORTS OF VEGETABLE OILS AND FATS (NES)

- Tonnes -

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Austria	1	10	1	2	--
Belgium-Luxembourg	18	--	--	--	--
Brazil	18	14	212	15	60
Denmark	140	146	23	23	4
France	2	1	13	2	1
Germany, West	72	6	6	9	27
Greece	185	545	<u>1/</u>	--	--
Hong Kong	30	31	29	47	66
India	<u>1/</u>	<u>1/</u>	6	<u>1/</u>	--
Japan	59	33	47	98	74
Netherlands	--	64	2	1	20
New Zealand	--	--	10	--	--
Paraguay	--	--	--	--	14
People's Republic of China	5	7	14	19	15
Singapore	<u>1/</u>	--	2	--	--
Switzerland	1	3	3	6	2
Syria	1	--	--	--	--

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
United Kingdom	1 994	572	331	512	258
United States	3 441	1 521	2 452	1 528	2 .690
Yugoslavia	--	6	<u>1/</u>	8	22
TOTAL	<u>5 973</u>	<u>2 965</u>	<u>3 156</u>	<u>2 270</u>	<u>3 235</u>
TOTAL VALUE (\$'000)	<u>7 447</u>	<u>3 129</u>	<u>3 069</u>	<u>3 111</u>	<u>3 823</u>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 39

CANADIAN IMPORTS OF COCOA BUTTER

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Australia	1 019	--	--	--	--
Belgium-Luxembourg	--	--	--	--	35
Brazil	1 677	426	875	416	213
Cuba	--	60	92	75	72
Dominican Republic	33	--	--	--	--
Ecuador	246	--	--	180	--
Germany, West	283	37	--	170	262
Ghana	1 016	--	--	--	--
Guinea	25	--	--	--	--
Ivory Coast	977	236	299	178	231
Jamaica	44	--	--	10	10
Leeward-Windward Is.	30	--	--	--	--
Mexico	--	184	--	--	--
Netherlands	98	1 521	1 612	1 453	1 677
Nigeria	3 173	--	--	--	100
Singapore	--	--	26	--	--
Trinidad-Tobago	10	--	--	--	--
United Kingdom	211	1 283	1 409	1 714	717
United States	4 241	613	693	636	245
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	13 175	4 362	5 008	4 835	3 562
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	20 048	14 378	16 714	24 618	18 841
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 40

CANADIAN IMPORTS OF COCONUT OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Australia	993	2 218	<u>1/</u>	<u>1/</u>	359
Fiji	1 721	<u>1/</u>	--	--	--
Finland	--	68	--	--	--
Germany, West	1	1	--	--	--
Indonesia	--	--	173	--	--
Jamaica	--	--	2	3	2
Malaysia	7 907	3 902	1 730	4 664	1 934
Philippines	67	7 137	18 623	18 827	15 607
Puerto Rico	18	--	--	--	--
Singapore	5	--	--	--	--
Sri Lanka	8 096	10 540	8 190	156	2 785
United Kingdom	719	346	174	1	3
United States	2 423	1 600	752	567	1 623
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	21 956	25 816	29 647	24 218	22 313
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	20 934	11 995	10 847	14 447	15 126
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 41

CANADIAN IMPORTS OF CORN OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
United Kingdom	1 605	--	--	--	--
United States	<u>8 752</u>	<u>10 172</u>	<u>16 418</u>	<u>15 482</u>	<u>19 707</u>
TOTAL	<u>10 358</u>	<u>10 172</u>	<u>16 418</u>	<u>15 482</u>	<u>19 707</u>
TOTAL VALUE (\$'000)	<u>9 010</u>	<u>7 311</u>	<u>8 705</u>	<u>10 612</u>	<u>18 154</u>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 42

CANADIAN IMPORTS OF COTTONSEED OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
United States	11 333	11 289	5 200	5 497	4 723
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	11 333	11 289	5 200	5 497	4 723
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	8 214	7 647	2 863	3 376	3 162
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.



Table 43

CANADIAN IMPORTS OF OLIVE OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Chile	--	--	25	--	--
France	38	30	28	15	35
Greece	105	417	162	107	218
Italy	773	611	525	737	920
Portugal	241	150	106	155	162
Spain	1 170	709	2 132	3 750	1 266
Sweden	8	--	--	--	--
Switzerland	--	17	--	--	--
Tunisia	--	22	--	--	--
Turkey	1	1	--	14	--
United States	66	29	2 117	62	213
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	2 408	1 986	5 096	4 840	2 814
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	4 597	4 161	4 646	3 406	4 923
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 44

CANADIAN IMPORTS OF PALM OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Brazil	--	--	--	--	10
Germany, West	1	--	--	--	--
Ghana	--	--	--	3	--
India	--	--	<u>1</u> /	--	--
Indonesia	2 011	13 085	20 592	15 249	16 254
Ivory Coast	--	1 385	--	--	--
Malaysia	10 503	23 675	31 800	13 972	5 840
Netherlands	--	--	--	8	508
Philippines	--	--	250	--	--
Singapore	1 020	509	1	--	--
United Kingdom	3	<u>1</u> /	2	6	20
United States	2 658	2 627	2 354	1 941	573
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	16 199	41 283	55 001	31 179	23 205
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	10 671	19 547	19 285	17 142	14 763
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 45

CANADIAN IMPORTS OF PALM KERNEL OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Denmark	--	--	--	7	16
Hong Kong	200	--	--	--	--
Indonesia	--	473	2 223	3 905	1 605
Malaysia	2 970	3 966	4 685	2 941	4 552
Netherlands	78	13	10	--	--
Nigeria	--	--	--	--	--
Singapore	--	--	44	--	250
United States	1 126	640	3 388	339	845
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	4 376	5 092	10 351	7 192	7 252
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	4 459	2 565	3 174	4 236	5 387
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 46

CANADIAN IMPORTS OF PEANUT OIL  
(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Brazil	--	2 444	3 602	604	--
France	--	18	--	--	9
Hong Kong	190	97	52	40	52
Japan	--	5	--	--	--
Nicaragua	--	--	693	--	--
Nigeria	--	--	--	--	--
Senegal	--	507	--	--	--
United Kingdom	519	680	<u>1/</u>	<u>1/</u>	<u>1/</u>
United States	<u>4 808</u>	<u>3 095</u>	<u>2 381</u>	<u>6 201</u>	<u>6 393</u>
TOTAL	<u>5 519</u>	<u>6 846</u>	<u>6 734</u>	<u>6 845</u>	<u>6 460</u>
TOTAL VALUE (\$'000)	<u>5 031</u>	<u>5 950</u>	<u>4 252</u>	<u>5 582</u>	<u>6 964</u>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 47

CANADIAN EXPORTS OF OTHER VEGETABLE OILS AND FATS (NES)

(Tonnes)

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Australia	--	1/	--	1/	1
Bahamas	--	--	4	2	--
Barbados	43	10	13	46	53
Bermuda	2	--	--	--	--
Colombia	--	--	443	--	--
Cuba	1	183	4	3	3
Cyprus	--	1/	--	--	--
Emirates, UA	--	--	13	--	--
Germany, West	1	1/	2 205	3	--
Guyana	154	6	2	4	383
Haiti	--	111	--	--	--
India	--	--	5	--	--
Ivory Coast	--	--	--	1	--
Jamaica	1	1	--	--	--
Jordan	--	--	5	--	--
Kuwait	11	--	--	--	--
Leeward-Windward Is.	9	63	45	100	41
Netherlands	--	--	--	57	41
Peru	--	--	--	66	--
Saudi Arabia	--	99	3 156	32	15
St. Pierre-Miquelon	1/	--	--	1	--
Sweden	--	--	17	18	19
Trinidad-Tobago	159	29	120	159	2 059
United Kingdom	--	71	125	66	47
United States	375	364	811	855	703
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	763	944	6 974	1 413	3 512
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	513	512	1 914	918	1 915
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-004.

## CHAPTER 10

### SPECIFIED FATS AND OILS

Statistics Canada reports that the uptrend in margarine production ceased in 1978, with some recovery in butter production. Shortening production showed an increase in 1978 over 1977. There was a sharp increase in tallow production.

Imports of lard and shortening were down slightly in 1978, although the value was higher. Exports of margarine, shortening and lard increased to 1 559 tonnes compared to 634 tonnes in 1977.

Exports of tallow and animal oils and fats (NES) increased in 1978 to 143 115 tonnes, valued at \$68 256 000. Principal export destinations were Japan, South Korea, the Netherlands, and the United Kingdom.

Production of specified dairy products, as reported in the Dairy Review, showed declines for milk and butter, and increases for cheese and concentrated milk products. The butter data is thought to not include whey butter.

Table 48

CANADIAN PRODUCTION OF SPECIFIED FATS AND OILS PRODUCTS

(Thousands of Tonnes)

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Margarine <sup>1/</sup>	108	119	126	136	111
Butter <sup>2/</sup>	108	131	117	94	132
<u>Shortening</u>					
Packaged <sup>3/</sup>	17	23	90	90	94
Bulk <sup>4/</sup>	154	148	81	81	85
<u>Refined Oils</u>					
Salad <sup>5/</sup>	77	81	95	101	99
Lard <sup>6/</sup>	50	43	42	40	43
<u>Tallow <sup>7/</sup></u>					
Edible	16	17	16	13	34
Inedible	182	182	199	180	236

<sup>1/</sup> Includes retail and commercial packages. Commercial sales (21-450 pound) packages account for about 5% of total output.

<sup>2/</sup> Includes factory and whey butter.

<sup>3/</sup> Retail packages up to 20 pounds only.

<sup>4/</sup> Covers commercial (21-450 pound) packages, bulk and other than packaged retail sales of manufacturers of shortening and deodorized shortening oil. Includes baking and frying fats and oils.

<sup>5/</sup> Covers packaged and bulk manufacturers' sales.

<sup>6/</sup> Rendered lard includes shipments of processed lard in retail and commercial packages and bulk sales.

<sup>7/</sup> Shipments for year.



Table 49

CANADIAN IMPORTS OF LARD AND SHORTENING

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Australia	9	--	--	--	--
France	--	--	--	3	1
Germany, West	9	1	4	3	9
Greece	--	--	15	--	23
India	--	--	1	--	--
Netherlands	--	--	2	--	--
St. Pierre-Miquelon	--	--	22	--	--
Sweden	70	50	55	45	33
United Kingdom	--	--	<u>1/</u>	--	10
United States	29 576	27 814	35 451	31 880	31 241
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	29 665	27 865	35 559	31 931	31 317
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	21 311	19 675	16 967	18 972	22 128
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 50

CANADIAN EXPORTS OF MARGARINE, SHORTENING AND LARD

(Tonnes)

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Bahamas	--	1	--	--	--
Bahrain	--	--	17	--	6
Bermuda	22	14	16	15	27
Emirates, UA	--	--	48	64	41
Germany, West	--	1	--	2	1
Jamaica	30	22	35	4	--
Japan	18	--	--	--	3
Jordan	--	--	18	16	--
Kuwait	--	--	67	46	95
Lebanon	--	--	--	190	203
Leeward-Windward Is.	<u>1/</u>	3	--	19	45
Libya	--	--	7	--	--
Netherlands-Antilles	1	--	--	32	40
Puerto Rico	--	--	--	--	72
Qatar	--	--	15	11	12
Saudi Arabia	--	--	405	64	665
St. Pierre-Miquelon	44	42	25	41	37
Trinidad-Tobago	--	<u>1/</u>	--	1	--
United States	234	182	49	122	311
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	352	268	706	634	1 559
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	290	248	543	770	1 914
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 51

CANADIAN IMPORTS OF VEGETABLE COOKING FATS

AND PACKAGED SALAD OILS

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Denmark	2	--	--	--	--
France	17	12	--	1	1
Greece	18	15	--	12	18
Hong Kong	--	--	<u>1</u> /	1	--
Israel	1 000	--	<u>1</u> /	--	--
Sweden	18	14	5	1	4
United Kingdom	16	57	3	4	10
United States	386	594	135	404	127
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	1 461	692	144	423	163
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	471	389	109	342	213
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 52

CANADIAN IMPORTS OF TALLOW, ANIMAL OILS, GREASES AND FATS (NES)

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Australia	3	11	5	--	12
Germany, West	37	44	47	41	51
Netherlands	--	--	1	7	14
New Zealand	--	--	10	--	--
United Kingdom	40	5	17	--	11
United States	7 110	6 563	2 654	2 900	7 418
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	7 198	6 734	2 889	2 948	7 506
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	2 988	1 757	1 292	1 521	2 138
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

<sup>1/</sup> Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 53

CANADIAN EXPORTS OF TALLOW, ANIMAL OILS AND FATS (NES)

- tonnes -

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Bangladesh	--	--	--	99	--
Barbados	90	27	21	--	--
Belgium-Luxembourg	598	996	2 022	798	2 203
Bermuda	--	--	1	--	--
Brazil	97	--	--	--	6
Chile	--	--	--	249	--
Colombia	--	52	32	22	28
Cuba	13 638	13 587	10 702	5 600	3 026
Dominican Republic	18	--	--	--	--
France	1 002	5	10	2 362	3 682
Germany, West	--	300	3 857	2 112	898
Ghana	596	749	--	--	--
Guatemala	32	21	--	517	17
Guyana	--	136	--	--	--
Hong Kong	--	--	--	2	--
Iran	--	--	1 300	--	1 079
Ireland	--	300	--	--	--
Italy	--	548	1 413	--	--
Ivory Coast	--	--	--	496	1 178
Jamaica	238	299	474	338	--
Japan	15 376	10 400	18 058	25 111	23 719
Kenya	--	--	50	110	1 550
Korea, South	5 272	15 700	13 190	26 269	22 996
Leeward-Windward Is.	4	--	4	1	--
Malaysia	--	73	56	146	118
Mexico	16	25	20	44	11
Morocco	--	574	--	--	600
Netherlands	24 184	16 697	29 077	38 105	47 483
Netherlands-Antilles	3	--	--	--	--
Nigeria	--	924	1 319	--	--
Norway	16	71	--	--	--
Panama	--	--	4	--	5
People's Republic of China	11 112	5 589	2 033	8 630	4 065
Portugal	--	52	157	145	211
Puerto Rico	17	--	--	--	--
Senegal	997	708	--	--	--

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Singapore	36	158	18	51	18
Spain	1 550	9 656	7 390	9 343	6 997
St. Pierre-Miquelon	<sup>1/</sup>	--	--	3	--
Switzerland	150	209	272	169	236
Taiwan	--	--	1 680	2 900	1 950
Trinidad-Tobago	326	294	503	486	504
United Kingdom	13 803	5 541	9 778	18 064	25 234
United States	10 885	11 044	9 651	4 456	4 889
U.S.S.R.	--	3 774	--	--	--
Venezuela	193	69	66	1 132	208
Zaire	--	747	--	--	200
Zambia	1 203	--	--	--	--
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	101 458	99 335	113 166	140 829	143 115
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	41 253	32 218	38 589	54 856	68 256
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

<sup>1/</sup> Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 54

PRODUCTION OF SPECIFIED DAIRY PRODUCTS

- Tonnes -

	<u>Milk</u>	<u>Butter</u>	<u>Cheese</u> <sup>1/</sup>	<u>Concentrated Milk</u> <sup>2/</sup> <u>Products</u>
1975	7 165 776	132 388	120 343	347 527
1976	7 172 330	116 996	124 599	315 198
1977	7 742 784	116 714	134 326	377 250
1978	7 614 800	105 989	139 700	383 660

<sup>1/</sup> Includes cheddar and specialty cheese

<sup>2/</sup> Includes whole milk products and milk  
by-products

SOURCE: Statistics Canada, Dairy Review 23-001.



Table 55

CANADIAN PRODUCTION OF SALAD DRESSINGS AND MAYONNAISE  
(Tonnes)

<u>PRODUCT</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Salad Dressings <sup>1/</sup> and Mayonnaise <sup>2/</sup>	41 504	38 379	35 942	44 550	48 792
TOTAL	41 504	38 379	35 942	44 550	48 792

<sup>1/</sup> Salad dressings and french dressings shall contain not less than 35% vegetable oil.

<sup>2/</sup> Mayonnaise, mayonnaise dressing and mayonnaise salad dressing shall contain not less than 65% vegetable oil.

SOURCE: Statistics Canada, Catalogue No. 32-018

## CHAPTER 11

### MARINE AND FISH OILS AND MEALS

#### Canadian Production and Trade of Marine Oils

Marine oil production on both coasts increased in 1978 over 1977 levels. Total production is estimated at 12 701 tonnes versus 6 635 in 1977.

Imports of marine oils increased by 59 per cent to 654 tonnes in 1978, valued at \$699 000. Exports of marine oils declined to 9 397 tonnes valued at \$4 633 000.

#### Canadian Production and Trade of Fish Meal

Production of fish meal increased on both coasts, to reach 69 717 tonnes, compared with 45 813 tonnes in 1977.

Exports of fish meal increased to 35 547 tonnes, up 25 per cent over 1977. The value of the 1978 export shipments was \$16 520 000.

Table 56

CANADIAN PRODUCTION OF MARINE OILS BY TYPES AND AREAS

(Tonnes)

<u>ATLANTIC COAST</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u> <sup>1/</sup>
Body or Offal Oil:					
Groundfish	7 222	4 543	3 883	3 106	6 159
Herring	13 936	5 517	3 599	1 925	3 561
Other <sup>2/</sup>	755	18	54	387	514
Liver Oil:					
Groundfish	226	279	52	454	215
Seal Oil:	--	1 486	661	486	252
<u>ATLANTIC TOTAL</u>	<u>22 139</u>	<u>11 843</u>	<u>8 249</u>	<u>6 358</u>	<u>10 701</u>
<u>PACIFIC COAST</u>					
Body or Offal Oil:					
Herring	585	x <sup>3/</sup>	x <sup>3/</sup>	x <sup>3/</sup>	x <sup>3/</sup>
Salmon	415	x <sup>3/</sup>	x <sup>3/</sup>	x <sup>3/</sup>	x <sup>3/</sup>
Other	100	x <sup>3/</sup>	x <sup>3/</sup>	x <sup>3/</sup>	x <sup>3/</sup>
<u>PACIFIC TOTAL</u>	<u>1 100</u>	<u>1 429</u>	<u>2 409</u>	<u>277</u>	<u>2 000</u>
<u>CANADA TOTAL</u>	<u>23 239</u>	<u>13 272</u>	<u>10 658</u>	<u>6 635</u>	<u>12 701</u>

1/ Preliminary

2/ Primarily whale oil

3/ Confidential - to meet secrecy requirement of the Statistics Act.

SOURCE: Based on Environment Canada data.

Table 57

CANADIAN IMPORTS OF FISH AND MARINE OILS (NES)

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Denmark	<u>1/</u>	1	<u>1/</u>	--	--
France	<u>1/</u>	--	--	--	2
Germany, West	<u>1/</u>	--	4	--	--
Japan	89	--	9	9	10
Netherlands	--	--	6	--	16
Norway	179	629	150	3	155
South Africa	92	--	--	--	1
United Kingdom	165	49	28	5	182
United States	322	199	99	393	288
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	849	878	299	410	654
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	467	500	233	263	699
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 58

CANADIAN EXPORTS OF MARINE OILS BY TYPES

(Tonnes)

<u>TYPE</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Cod Liver Oil, Sun Rotted	1 043	868	1 381	915	1 546
Herring Oil	5 488	2 277	5 315	4 124	3 679
Whale Oil	--	--	5	14	11
Fish and Marine Animal Oil NES	2 313	1 746	3 408	10 987	4 161
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	8 845	4 891	10 110	16 040	9 397
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	3 763	1 837	2 968	3 950	4 633
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 59

CANADIAN PRODUCTION OF FISH MEALS BY TYPES AND AREAS  
(Tonnes)

<u>ATLANTIC COAST</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u> <sup>1/</sup>
Groundfish	26 700	25 708	33 342	33 606	47 811
Herring	16 484	14 327	13 047	6 789	7 513
Other	2 321	589	4 387	4 136	2 508
ATLANTIC TOTAL	45 505	40 624	50 776	44 531	57 832
 <u>PACIFIC COAST</u>					
Herring	4 711	x- <sup>2/</sup>	x- <sup>2/</sup>	x- <sup>2/</sup>	x- <sup>2/</sup>
Salmon	887	x- <sup>2/</sup>	x- <sup>2/</sup>	x- <sup>2/</sup>	x- <sup>2/</sup>
Other	554	x- <sup>2/</sup>	x- <sup>2/</sup>	x- <sup>2/</sup>	x- <sup>2/</sup>
PACIFIC TOTAL	6 152	6 540	10 013	1 282	11 885
CANADA TOTAL	51 657	47 164	60 789	45 813	69 717

<sup>1/</sup> Preliminary

<sup>2/</sup> Confidential - to meet secrecy requirements  
of the Statistics Canada Act

SOURCE: Based on Environment Canada data.

Table 60

CANADIAN IMPORTS OF FISH MEAL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Cuba	--	--	163	--	--
Denmark	10	--	--	--	--
France	--	59	--	--	--
Germany, West	<u>1/</u>	--	229	--	--
Japan	--	2	--	--	--
Puerto Rico	--	41	40	--	--
Taiwan	--	--	--	13	--
United Kingdom	2	--	7	--	2
United States	245	209	521	451	340
	—	—	—	—	—
TOTAL	261	311	962	464	342
	—	—	—	—	—
TOTAL VALUE (\$'000)	83	87	309	153	91
	—	—	—	—	—

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.



Table 61

CANADIAN EXPORTS OF FISH MEAL AND CONDENSED SOLUBLES

(Tonnes)

<u>TYPE</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Herring Meal and Pilchard Meal	16 281	14 733	14 972	11 181	11 484
Fish Meal NES	18 393	9 515	17 000	16 445	23 546
Fish Condensed Homogenized Solubles	--	43	941	307	517
TOTAL (Meal Only)	34 678	24 291	32 913	27 933	35 547
TOTAL VALUE (Meal Only) \$'000	12 160	6 071	9 422	11 367	16 520

SOURCE: Statistics Canada, Catalogue No. 65-004.

## CHAPTER 12

### OTHER INEDIBLE FATS AND OILS

The products grouped in this classification are castor, tung and tall oils, tall pitch, tall oil fatty acids, chemically modified oils, fats and waxes, and mixtures and derivatives of oils, fats and waxes.

Imports of castor oil increased by 28 per cent in 1978, to a value of \$1 719 000. Tung oil imports decreased very slightly but the value increased by 21 per cent. Tall oil imports declined in volume but increased in value.

Imports of chemically modified oils, fats and waxes increased rather sharply in 1978 to 7 865 tonnes compared to 6 132 tonnes the previous year. The value of these imports rose 59 per cent to \$8 581 000 versus \$5 405 000 in 1977.

Imports of mixtures and derivatives of oils, fats and waxes were down slightly in volume but increased 25 per cent in value, to \$13 746 000.

Exports of chemically modified oils, fats and waxes increased to 4 191 tonnes, valued at \$1 249 000. Comparable figures for 1977 were 3 846 tonnes valued at \$2 803 000.

Table 62

CANADIAN IMPORTS OF CASTOR OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Brazil	1 529	1 697	968	257	843
Ecuador	--	--	--	29	250
United States	320	211	345	1 025	591
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	1 850	1 908	1 313	1 311	1 684
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	1 646	1 169	822	1 343	1 719
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 63

CANADIAN IMPORTS OF CHINAWOOD OIL OR TUNG OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Argentina	127	141	70	29	160
Brazil	--	--	14	--	--
Denmark	--	--	<u>1/</u>	--	--
Paraguay	42	56	381	223	85
People's Republic of China	183	70	20	--	--
United States	70	423	247	433	380
Uruguay	--	--	--	14	--
	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>
TOTAL	425	690	734	699	680
	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>
TOTAL VALUE (\$'000)	308	441	663	1 371	1 662
	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 64

CANADIAN IMPORTS OF TALL OIL, TALL OIL PITCH  
AND TALL OIL FATTY ACIDS

(Tonnes)

<u>TALL OIL AND TALL OIL PITCH</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
United States	2 254	2 378	2 849	757	1 167
<u>TALL OIL FATTY ACIDS</u>					
Germany, West	--	--	15	--	--
People's Republic of China	--	2	--	--	--
United States	4 715	5 503	4 806	5 159	4 577
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
TOTAL	6 969	7 433	7 670	5 916	5 744
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
TOTAL VALUE (\$'000)	3 500	3 447	2 906	3 252	3 322
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 65

CANADIAN EXPORTS OF CHEMICALLY MODIFIED OILS,  
FATS AND WAXES  
(Tonnes)

<u>DESTINATION</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Australia	1	--	--	--	91
Bahamas	<u>1</u> /	--	--	--	--
Barbados	--	27	--	--	--
Bermuda	--	--	--	--	1
France	32	14	--	--	--
Germany, West	24	<u>1</u> /	2	--	--
Guyana	--	<u>1</u> /	--	--	--
Israel	--	4	--	--	--
Japan	240	20	--	--	--
Leeward-Windward Is.	--	--	--	<u>1</u> /	--
Netherlands-Antilles	1	--	--	--	1
Poland	--	--	<u>1</u> /	--	--
United Kingdom	36	18	--	150	--
United States	1 759	3 212	3 008	3 100	4 004
U.S.S.R.	--	--	--	508	--
Venezuela	1	9	1	86	48
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	2 097	3 306	3 012	3 846	4 191
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	995	578	663	2 803	1 249
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 66

CANADIAN IMPORTS OF MIXTURES AND DERIVATIVES

OF OILS, FATS AND WAXES

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Belgium-Luxembourg	1	--	--	--	--
Brazil	--	20	--	--	45
Denmark	--	--	--	2	--
France	3	6	1	<u>1/</u>	1
Germany, West	103	98	116	116	43
India	--	--	<u>1/</u>	--	--
Japan	--	--	--	--	1
Netherlands	1	--	<u>1/</u>	--	28
Norway	--	--	118	237	256
Sweden	--	--	--	--	1
United Kingdom	66	153	316	604	3
United States	14 780	10 886	12 031	10 555	9 833
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	14 958	11 163	12 585	11 516	11 271
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	10 022	8 415	9 195	10 969	13 746
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne .

SOURCE: Statistics Canada, Catalogue No. 65-007.



Table 67

CANADIAN IMPORTS OF CHEMICALLY MODIFIED OILS,

FATS AND WAXES

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Brazil	20	69	--	40	40
Denmark	--	<u>1</u> /	--	--	--
France	3	--	--	--	1
Germany, West	8	8	72	69	79
Greece	--	3	--	3	--
Israel	--	--	<u>1</u> /	--	--
Japan	--	--	--	--	--
Netherlands	398	442	214	116	281
Netherlands-Antilles	--	23	--	--	1
Switzerland	--	<u>1</u> /	--	--	--
United Kingdom	55	1 125	1 219	53	99
United States	5 198	4 176	4 606	5 848	7 363
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	5 677	5 850	6 112	6 132	7 865
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	5 401	6 925	6 084	5 405	8 581
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

EXTRACTION RATE OF VARIOUS OILSEED CROPS

<u>Oilseed Products</u>	<u>Extraction Rate</u> (Per Cent)	<u>Yield Per Tonne</u> (Kilograms)
Flaxseed, Oil	35.4	354
Linseed Meal	61.7	617
Soybeans, Oil	17.7	177
Meal	80.0	800
Rapeseed, Oil <sup>1/</sup>	40.0	400
Meal	57.5	575
Sunflowerseed, Oil <sup>2/</sup>	40.0	400
Meal	38.0	380

<sup>1/</sup> Rapeseed oil yields seem to have reached a fairly stable level of about 40 per cent on an "as received" basis. The previous factor of 37.5 per cent has been changed accordingly.

<sup>2/</sup> The introduction of new sunflowerseed varieties has increased the oil yield on crushing to the 40 per cent level. The previous factor of 36 per cent has been changed accordingly. The meal yields continue to show fluctuations, and this factor has not been changed.

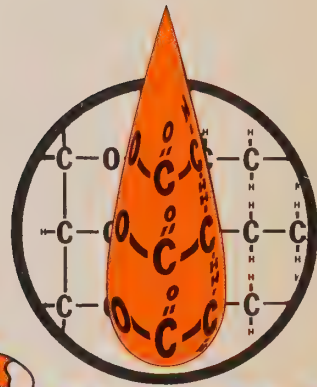








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# Fats & Oils in Canada

ANNUAL REVIEW 1979





DEPARTMENT OF INDUSTRY, TRADE AND COMMERCE

FATS AND OILS IN CANADA

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## CHAPTER I

### SOYBEANS IN CANADA - PAST, PRESENT AND FUTURE

Based on an Article by

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The soybean (botanically Glycine max (L.) Merrill) is an annual legume which has been cultivated in the Orient for at least 3,000 years. The most recent authoritative reference (Hymowitz, 1970) places its earliest domestication around the 11'th century B.C. in the eastern half of North China. The progenitor of the cultivated soybean (Glycine soja) is a vine-like plant with small black seeds that still grows in the wild state in China, Japan, Korea, Taiwan, Manchuria and adjacent areas of the Soviet Union. The cultivated soybean was introduced from North and Central China to Korea and Japan during the period from 200 A.D. to 300 B.C.

#### Introduction of Soybeans to Canada

The introduction of soybeans to Canada followed that in the United States, with the first beans grown at the Ontario Agriculture College, Guelph, in 1893 by C.A. Zavitz. Over the next 30 years Zavitz continued to evaluate soybean introductions for yield and maturity and to determine optimal dates of planting, row width and seeding rate. In 1924 he released the variety OAC 211, the first soybean variety registered in Canada. The crop became important in Ontario because of the demand for oil created by World War II, the same demand that resulted in the large expansion of U.S. production. Prior to 1942 10,000 to 20,000 acres were grown annually with about half of it for hay. The first crushing plant was built at Chatham in 1934, and remained viable for only a few years. During the late 1930's the only market for seed was either the linseed processing plant of Maple Leaf Mills or Toronto Elevators. In 1944, spurred by the demand for oil caused by the war, the large Victory Soy Mills plant was erected in Toronto. The company launched a very active campaign to promote the crop and the area in production increased to 254 000 acres by 1954.

### Importance of the Soybean

Soybeans are the most important single source of fats and oils in the world, accounting for an estimated 40 per cent of edible vegetable oil production in 1979, and 22 per cent of all fat and oil production if palm oils, industrial oils, animal fats and marine oils are also included. In the protein meal market soybeans are even more dominant, contributing 61 per cent of world production in the crop year 1977/78. The major producing countries with estimated 1978/79 production (tonnes) figures are:

United States	50 149 000
Brazil	11 000 000
China	10 500 000
Argentina	3 500 000
Soviet Union	650 000
Indonesia	500 000
Canada	475 000
Europe	460 000
Other Countries	2 307 000
<hr/>	
Total	79 541 000

(Source: Soybean Digest Bluebook, 1979)

The United States dominates world trade in soybeans and soybean products. In the last three years Brazil, and to a lesser degree Argentina, have become significant factors in the market. Almost all of the Chinese production is utilized domestically. Canada produces slightly more than one-half of one per cent of the total world production.

### Utilization

The seed of the soybean must be split into its two most valuable components, oil and protein, if its full value is to be obtained commercially. The seed on a moisture-free basis contains about 20 per cent oil, 40 per cent protein, 30 per cent carbohydrate, 5 per cent fibre and 5 per cent ash. The oil is extracted using the solvent hexane. The residual after oil extraction (meal) contains 44 per cent protein. If the seed coats are removed mechanically before solvent extraction the meal will contain 49 per cent protein. The meal is steam "toasted" as it leaves the solvent extractor to vaporize the hexane and to destroy anti-nutritional factors. Raw soybeans contain a number of anti-nutritional factors that inhibit the growth of monogastric animals. The principal such compound is soybean trypsin inhibitor. It is readily inactivated by moist heat.

The soybean oil after refining is used to produce salad oil and salad dressings. After partial hydrogenation, bleaching and deodorization more stable salad oils are produced as well as special shortenings and margarine oils. Soybean oil is often blended with other oils to produce products with special properties. Once refined the principal vegetable oils are largely interchangeable and price and availability will dictate which is used. Food uses account for 93 per cent of U.S. soybean oil utilization, industrial uses only 7 per cent. Soybean oil is used in paints, varnish, resins, plastics and other drying oil products as well as for soap manufacturing. Petroleum-based products have captured many markets where soybean oil could be used.

A by-product of soybean oil is lecithin, the oil-phosphatide mixture obtained after degumming. Soybean lecithin is used as a food emulsifier, wetting agent and antioxidant. It is added in small amounts in chocolate, cocoa, candies, margarine, cake mixes, ice cream and instant and baby foods. Lecithin is widely used in the pharmaceutical industry as an emulsifying agent.

Soybean meal is used almost entirely as a protein feedstuff for livestock. About 3 per cent of the meal is used directly in human foods. Soybean protein is relatively high in the essential amino acids lysine, leucine and isoleucine which are low in cereal proteins. Therefore soybean protein can be used very effectively to supplement cereal proteins. Soybean protein is somewhat low in the sulfur-containing amino acids cystine and methionine. Fortunately cereal proteins are relatively high in these amino acids.

The 49 per cent protein meal was developed for poultry rations. It is used in rations for young pigs. The 44 per cent meal is used mainly for older pigs and for cattle. In cattle feeding urea is increasingly used in place of much of the soybean meal. Other protein sources - meat meal, fish meal, rapeseed meal - may be in part substituted for soybean meal. As with vegetable oils, price and availability often dictate which source is used.

### Food Uses of Soybeans

The crop was, and to a considerable degree still is, grown in the Orient to be utilized directly in various food products. The seeds of the soybean are used to prepare a wide range of foods that supply a major part of the protein in the diet of the people of these countries. Some of these oriental foods are becoming available in Canada and it is of interest to describe them in some detail.

Soy Milk - the soaked beans are ground with ten parts water, boiled to reduce the beany, bitter flavour and the solid residue separated from the liquid (milk).

Tofu - the protein in soymilk is precipitated to form a cheese-like curd.

Sufu - sterilized tofu is inoculated with a fungus and incubated for three to seven days.

Miso - cooked soybeans are mixed with cooked rice, wheat or barley containing the fungus Aspergillus oryzae and fermented for about two months.

Soy sauce - cooked soybeans are combined with ground wheat, inoculated with Aspergillus oryzae, yeast and lactic acid bacteria and fermented for about five days. Salt is added and the mixture fermented in large vats for three to 12 months. The mash is strained to give soy sauce.

Tempeh - an Indonesian food prepared from cooked soybeans or soybean grits incubated with a mold Rhizopus oligosporus.

Hamanatto - whole cooked beans are mixed with wheat flour and inoculated with Aspergillus oryzae. The fermented beans are packed with salt, spice, wine and water and aged for several months.

Natto - whole cooked soybeans are inoculated with the bacteria Bacillus natto and incubated at 40°C for 12 to 20 hours. The product is sold in the incubation package and must be used almost immediately.

These processes change the somewhat unpalatable, bland tasting soybean into a rich diversity of foods. The various fermentations with microorganisms increase the availability and digestability of the nutrients in the soybean seed.

In Canada, a small amount of soybeans or soybean meal is used directly for human consumption. Soybeans can be the sole source of proteins for humans if supplemented with synthetic methionine. Small amounts of cereal or meat protein will also supply the necessary methionine. However, soy protein is seldom used alone.

Four main products are produced. Full fat flour (40 per cent protein) is made from beans with only the hulls removed. Defatted flour (50 per cent protein) is made from meal after the oil has been extracted. Soy protein concentrates (70 per cent protein) are made from meal from which the carbohydrates have been removed by extraction with aqueous alcohols or dilute acids. Soy protein isolate (more than 90 per cent protein) is made by extraction of the protein with dilute alkali followed by precipitation of the protein in dilute acid.



Some protein is lost in this process and soy protein isolates cost at least five times as much per pound as soy flour.

Very little soy protein is used "as is". Most is added to other foodstuffs to improve their functional properties, i.e. to improve fat or water absorption. Soy flour is added to baked goods (bread, cakes, cookies, pancake mixes) at rates of 4-5 per cent. Processed, prepared and canned meat products take the second largest amount of soy protein.

Textured soybean protein is often mentioned as a replacement for meat. It is made either by extrusion starting with soy flour, or by forming fibres of coagulated protein starting with soy protein isolate. These products have a fibrous texture and "chewiness" and with appropriate flavours they can be made into simulated meat.

#### Soybeans in Ontario

Soybeans are Ontario's fourth most important cash crop in terms of dollar value, coming after tobacco, vegetables and grain corn. Production is concentrated in southwestern Ontario. The major producing counties, and their acreage in 1978 were:

Essex	192 000
Kent	205 000
Lambton	170 000
Elgin	63 000
Middlesex	40 000
Other	7 000
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Total (Ontario)	705 000

The Ontario crop since 1949 has been marketed under terms negotiated on behalf of the producers by the Ontario Soya-Bean Growers' Marketing Board. The Board determines each year with soybean processors and dealers the terms and conditions of sale. These include such matters as moisture discounts, handling and cleaning charges. The price of Ontario beans is determined by and is similar to the Chicago price, with allowance for the cost of transportation and relative currency values.

The Ontario grown soybeans are processed at three plants: Victory Soya Mills (owned by Proctor and Gamble) in Toronto, Canadian Vegetable Oil Processing Limited (owned by Canada Packers) in Hamilton and the recently completed Maple Leaf Monarch plant (affiliated with Unilever Corporation) in Windsor. The CSP Foods Plant in Altona, Manitoba, has in some years crushed limited amounts of soybeans imported from the U.S. Total crushing capacity in Ontario is about 35 million bushels per year.

Soybean acreage in Ontario has increased from 390 000 acres in 1975 to 705 000 acres in 1978. However, this expansion has been almost entirely in the five southwestern counties where soybeans were already grown. With the availability in 1979 of limited seed supplies of the early varieties Maple Arrow, McCall and Evans a significant amount of soybeans was produced in southern and western Ontario, and to some degree in central and eastern Ontario. This trend is expected to continue in 1980. These varieties require 2,550 to 2,700 Corn Heat Units to mature and in a number of cases have produced exceptional yields in the "fringe" areas. They are certainly superior to earlier short season varieties. Coupled with new types of granular inoculant for fields that have not grown beans before, narrower rows and improved harvesting equipment, they are expected to lead to a steady increase in production outside of the five southwestern counties. However, there is the potential for an additional 200,000 acres in southwestern Ontario according to a recent Marketing Board study (Potential Soybean Acreage in Ontario) if soybeans offer a higher return than grain corn or winter wheat.

#### Development of Short Season Varieties

The justification for the effort to develop a large acreage of soybeans outside of southwestern Ontario has been the magnitude of imports of soybeans, meal and oil. This has been and continues to be sizeable. The situation is outlined below for the 1977/78 crop year.

<u>Whole Soybeans</u>	<u>Quantity (tonnes)</u>
Production	527 361
Imports	262 835
Exports	64 173
Domestic Crushing	728 400
<u>Soybean Oil</u>	
Imports	28 100
Exports	1 400
Domestic Production	125 600
<u>Soybean Meal</u>	
Imports	376 300
Exports	45 600
Domestic Production	575 400

(Source: Fats and Oils in Canada, Annual Review, 1978)

Looked at in terms of dollars (for the calendar year 1978) the import/export figures are heavily in favour of imports.

Raw Soybeans	\$ 91 245 000	\$ 24 375 000
Oil	19 070 000	742 000
Meal	103 093 000	12 436 000
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Total	\$ 213 408 000	\$ 37 553 000

(Source: Fats and Oils in Canada, Annual Review, 1978)

This is not a new situation. For many years Canada has imported large quantities of soybeans and soybean meal. An encouraging development in 1978 and 1979 has been a significant rise in exports of whole soybeans to the Orient for use in soybean foods such as tofu. Exports to Hong Kong, Japan and Singapore amounted to 62 258 tonnes in 1978 and are expected to be higher in 1979.

Give the incentive to reduce imports by producing more soybeans in Canada, why has the crop not become established outside of southwestern Ontario? To establish a crop in a new area one must first of all have a considerable economic incentive, either in the form of high returns from the new crop or, as has often been the case in Canada, the inability to market the total production of an established crop. There must also be in place, or follow soon after, an efficient system to collect the crop and move it to where it is processed or exported. And, since no crop remains unusually profitable for very long, it is essential that well adapted, high yielding varieties and efficient agronomic techniques be developed to bring about the maximum yield of the crop.

Today in Ontario in the 2,500 to 2,800 Corn Heat Unit area that borders the traditional five county region, interest in soybeans is high, elevators are collecting the crop and crushing plants are within fairly close proximity. In this area soybeans should become an established crop. Eastern Ontario and southwestern Quebec have the potential to produce yields comparably to those in the expansion areas bordering the established production region. Unfortunately, there are no crushing plants closer than Toronto. Country elevators are accepting soybeans for shipment to Toronto but unless returns for soybeans remain very high the interest in the crop will decline as it did in the past.



### Soybeans in Quebec and the Maritimes

The remainder of Eastern Canada imports, either from Ontario or from the U.S., considerable quantities of soybean meal and smaller quantities of soybean oil. Soybeans could be grown and fed whole to replace part of the soybean meal. For ruminants no special processing is required. Several hundred acres of soybeans are grown each year in Quebec south of Montreal and fed to dairy cattle. Uncooked soybeans cannot be mixed with the urea often used in ruminant rations as a source of protein-nitrogen. Poultry and hogs require the whole beans to be heat-treated to destroy the trypsin inhibitor they contain. If this is done the soybeans can substitute completely for the equivalent protein in soybean meal. The oil in the whole beans results in soft fat on the finished hogs and in the final few weeks of fattening whole beans should be replaced by soybean meal. Propane-fired roasters and tractor-driven extruders are available to destroy the trypsin inhibitor in whole beans. The latter have been used successfully on a small scale in both Nova Scotia and New Brunswick.

Soybeans as an on-the-farm protein source are attractive where protein meal prices are high, or when the price of oil drops to a level at which it is not economically profitable to extract it from the soybeans. Many hog and poultry producers have close associations with feed supply firms and choose to buy protein meal rather than produce their own. Others do not wish to take time and expertise away from their livestock operations and devote it to growing soybeans. The marketing system is not in place to facilitate the transfer of whole beans from cash crop growers to livestock producers.

Experimental lines of soybeans are available with protein and oil contents of 45 and 16 per cent instead of the usual 40 and 20 per cent. However, yields are not equal to high-oil beans. If yields of such lines are improved whole soybeans might become a viable feedstuff in areas distant from crushing plants.

### Soybeans in the Prairies

The situation in southern Manitoba and Alberta differs appreciably from that in Eastern Canada. In the Prairies there are farmers prepared to grow specialty crops and transport them long distances to markets. The example of mustard and lentils comes to mind, and rapeseed is often trucked some distance to a crushing plant.

The infrastructure to handle the crop is in place. A number of crushing plants are located in the area, although only that at Altona has processed soybeans in the past. There is also a market for soybean meal: \$36,040,000 in the three Prairie Provinces in 1978. This market has remained remarkably constant since 1974, even though there has been a large increase in rapeseed production and major improvements in the quality of rapeseed meal.

The problem on the Prairies is one of crop adaptation. In the past soybean yields have been variable and generally low. A number of changes have taken place recently that may result in higher and more stable yields. Improve varieties are available. Maple Presto, developed at the Ottawa Research Station of Agriculture Canada, is earlier and of a better plant type than previous very early maturing varieties. It will mature in 95-105 days from planting. The variety McCall from Minnesota, although later than Maple Presto, can be grown in the warmer parts of southern Manitoba. It consistently produces very high yields in its area of adaptation. Both varieties are insensitive to the long hours of daylight in June and July that delay the maturity of most soybeans in northern latitudes. Maple Presto is also relatively insensitive to low night temperatures that delay and reduce pod development. Lastly, both varieties respond well to production in grain drill row widths of seven to 14 inches.

Row width appears to be an important key to satisfactory soybean yields in the Prairies. Improved chemical herbicides obviate the necessity of growing soybeans in wide (30 inch) rows and cultivating to control weeds. Narrow rows produce higher yields and taller plants with the lowest pods higher off the ground. In addition narrow rows "crowd out" late germinating weeds and provide a "shelter-belt" effect within the crop.

Lastly, improved grain drill-type planters developed for narrow row production in the U.S. are becoming available. These should improve stand establishment, often a problem in Manitoba. The new flexible, floating combine cutter heads for soybeans allow pods very close to the ground to be harvested. These will be necessary if growers are to harvest the full potential yield of the crop. For fields where soybeans have not been grown before recently developed granular forms of bacterial inoculant are a reliable means of establishing nodules on the plants and so permitting the crop to produce a significant proportion of its own nitrogen and seeds with high protein levels.

There is diversity in the soybean germplasm to overcome some of the problems still remaining. There are more drought-tolerant strains, and lines that carry the lowest pods higher off the soil. Research in Wisconsin and France suggests that other lines are able to germinate at lower soil temperatures. It will be several years before these can be fully evaluated and incorporated into early varieties. In the future it is possible that the new varieties and those that may be released in the next two years, together with new agronomic practices and equipment, and coming at a time of high nitrogen prices and large supplies of wheat, may form the basis for a sizeable area of soybean production on the Prairies.

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## CHAPTER 2

### WORLD PRODUCTION AND TRADE IN OILS, FATS AND MEALS

#### World Oils and Fats: Calculated Production

World production of oils and fats in 1980 is forecast to increase by approximately 10 per cent to 59.2 million tonnes, compared to 54.9 million tonnes in 1979.

All categories of oils and fats show projected increases in 1980, but the main portion of the increase is accounted for by the edible vegetable oil sector which is shown rising from 30.0 million tonnes in 1979 to 33.2 million tonnes in 1980.

#### Major Oils and Fats: World Production, Disappearance and Stocks

According to Oil World, opening stocks of oils and fats, along with production, total supplies, disappearance and ending stocks, all show increases for the 1979/80 period. The order of magnitude of these increases is about four per cent.

#### World Production of Oilmeals

Oil World is estimating the world production of oilmeals increased by about five per cent in 1978/79 compared to the preceding year. The major portion of the increase is attributable to soybean meal, the production of which went from 50 959 000 tonnes in 1977/78 to 54 678 000 tonnes in 1978/79.

Table 1

WORLD OILS AND FATS: CALCULATED PRODUCTION<sup>1/</sup>

(Thousands of Tonnes)

	<u>1976</u>	<u>1977</u>	<u>Estimated 1978</u>	<u>Forecast 1979</u>	<u>Forecast 1980</u>
<u>EDIBLE VEGETABLE OILS</u>					
Cottonseed	2 767	2 913	3 221	3 033	3 281
Peanut	3 593	3 172	3 169	3 541	3 529
Soybean	10 168	9 142	11 288	12 177	14 411
Sunflowerseed	3 669	3 741	4 670	4 558	5 362
Rapeseed	2 964	2 516	2 733	3 764	3 617
Sesame	630	601	647	616	650
Safflowerseed	329	211	250	329	330
Olive	1 806	1 333	1 636	1 558	1 609
Corn	408	410	436	445	455
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	26 334	24 039	28 050	30 021	33 244
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
<u>PALM OILS</u>					
Coconut	3 422	3 069	3 149	3 003	3 293
Palm Kernel	503	548	576	617	662
Palm	3 050	3 333	3 547	3 913	4 300
Babassu	125	90	95	100	100
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	7 100	7 040	7 367	7 633	8 355
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
<u>INDUSTRIAL OILS</u>					
Linseed	745	685	937	822	964
Castor	301	335	422	422	425
Oiticica	15	14	14	14	14
Tung	111	100	98	105	100
Olive Residue	186	153	137	146	153
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	1 358	1 287	1 608	1 509	1 656
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

	<u>1976</u>	<u>1977</u>	<u>Estimated 1978</u>	<u>Forecast 1979</u>	<u>Forecast 1980</u>
<u>ANIMAL FATS</u>					
Butter (Fat Content)	4 800	4 944	4 984	5 095	5 200
Lard	3 380	3 556	3 669	3 699	3 800
Tallow, Grease	5 471	5 815	5 949	5 888	5 865
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TOTAL	13 651	14 315	14 602	14 682	14 865
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
<u>MARINE OILS</u>					
Whale	15	15	15	15	15
Sperm Whale	82	66	57	55	55
Fish	983	980	1 021	1 011	1 015
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	1 080	1 061	1 093	1 081	1 085
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
GRAND TOTAL	49 523	47 742	52 720	54 926	59 205
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

<sup>1/</sup> Years indicated are those in which most of given oil was produced. Includes oil equivalent of seed production.

SOURCE: United States Department of Agriculture  
FOP 22-79.



Table 2

MAJOR OILS & FATS: WORLD PRODUCTION, DISAPPEARANCE AND STOCKS <sup>1/</sup>

(Thousand Tonnes)

Primarily for Food:

	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u> <sup>2/</sup>	<u>1979/80</u> <sup>2/</sup>
<u>Soybean Oil</u>					
Opening Stocks <sup>3/</sup>	833	1 190	995	1 220	1 320
Production <sup>4/</sup>	10 245	10 014	11 600	12 527	12 800
Disappearance <sup>3/</sup>	9 888	10 209	11 375	12 427	12 500
Ending Stocks <sup>-</sup>	1 190	995	1 220	1 320	1 620
<u>Cottonseed Oil</u>					
Opening Stocks <sup>3/</sup>	240	210	197	209	205
Production <sup>4/</sup>	2 557	2 763	3 043	2 933	3 100
Disappearance <sup>3/</sup>	2 587	2 776	3 031	2 937	3 060
Ending Stocks <sup>-</sup>	210	197	209	205	245
<u>Groundnut Oil</u>					
Opening Stocks <sup>3/</sup>	305	440	405	304	395
Production <sup>4/</sup>	3 208	2 759	2 589	2 827	2 875
Disappearance <sup>3/</sup>	3 073	2 794	2 654	2 772	2 850
Ending Stocks <sup>-</sup>	440	405	340	395	420
<u>Sunflowerseed Oil</u>					
Opening Stocks <sup>3/</sup>	780	440	240	330	305
Production <sup>4/</sup>	3 410	3 401	4 314	4 368	4 880
Disappearance <sup>3/</sup>	3 750	3 601	4 224	4 393	4 660
Ending Stocks <sup>-</sup>	440	240	330	305	525
<u>Rapeseed Oil</u>					
Opening Stocks <sup>3/</sup>	225	240	270	290	325
Production <sup>4/</sup>	2 642	2 876	2 771	3 462	3 730
Disappearance <sup>3/</sup>	2 627	2 846	2 751	3 427	3 620
Ending Stocks <sup>-</sup>	240	270	290	325	435
<u>Sesame Oil</u>					
Opening Stocks <sup>3/</sup>	44	45	45	44	48
Production <sup>4/</sup>	611	612	659	689	690
Disappearance <sup>3/</sup>	610	612	660	685	690
Ending Stocks <sup>-</sup>	45	45	44	48	48



	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u> <sup>2/</sup>	<u>1979/80</u> <sup>2/</sup>
<u>Olive Oil</u>					
Opening Stocks <sup>3/</sup>	421	710	706	710	750
Production <sup>4/</sup>	1 775	1 460	1 545	1 660	1 570
Disappearance <sup>3/</sup>	1 486	1 464	1 541	1 620	1 620
Ending Stocks <sup>3/</sup>	710	706	710	750	700
<u>Coconut Oil</u>					
Opening Stocks <sup>3/</sup>	323	355	330	335	320
Production <sup>4/</sup>	3 094	2 742	2 859	2 584	2 870
Disappearance <sup>3/</sup>	3 062	2 767	2 854	2 599	2 790
Ending Stocks <sup>3/</sup>	355	330	335	320	400
<u>Palm Kernel Oil</u>					
Opening Stocks <sup>3/</sup>	70	73	77	65	73
Production <sup>4/</sup>	503	558	501	583	630
Disappearance <sup>3/</sup>	500	554	513	575	620
Ending Stocks <sup>3/</sup>	73	77	65	73	83
<u>Palm Oil</u>					
Opening Stocks <sup>3/</sup>	333	353	526	560	730
Production <sup>4/</sup>	2 650	2 922	2 948	3 545	3 800
Disappearance <sup>3/</sup>	2 630	2 749	2 914	3 375	3 630
Ending Stocks <sup>3/</sup>	353	526	560	730	900
<u>Butter, Fat Content</u>					
Opening Stocks <sup>3/</sup>	867	959	1 051	1 135	1 181
Production <sup>4/</sup>	5 363	5 565	5 614	5 623	5 700
Disappearance <sup>3/</sup>	5 271	5 473	5 530	5 577	5 650
Ending Stocks <sup>3/</sup>	959	1 051	1 135	1 181	1 231
<u>Lard</u>					
Opening Stocks <sup>3/</sup>	260	250	275	267	277
Production <sup>4/</sup>	3 905	4 127	4 200	4 411	4 520
Disappearance <sup>3/</sup>	3 915	4 102	4 208	4 401	4 457
Ending Stocks <sup>3/</sup>	250	275	267	277	340
<u>Fish Oil</u>					
Opening Stocks <sup>3/</sup>	370	320	326	384	419
Production <sup>4/</sup>	996	978	1 085	1 169	1 100
Disappearance <sup>3/</sup>	1 046	972	1 027	1 134	1 129
Ending Stocks <sup>3/</sup>	320	326	384	419	390

	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u> <sup>2/</sup>	<u>1979/80</u> <sup>2/</sup>
Food Oils & Fats, Total					
Opening Stocks <sup>3/</sup>	5 071	5 585	5 443	5 889	6 349
Production	40 959	40 777	43 728	46 381	48 265
Total Supplies	46 030	46 362	49 171	52 270	54 614
Disappearance <sup>4/</sup>	40 445	40 919	43 282	45 923	47 277
Ending Stocks <sup>3/</sup>	5 585	5 443	5 889	6 349	7 337

Primarily for Non-Food:

Linseed Oil

Opening Stocks <sup>3/</sup>	117	149	182	165	145
Production	641	713	760	759	770
Disappearance <sup>4/</sup>	609	680	777	779	750
Ending Stocks <sup>3/</sup>	149	182	165	145	165

Castor Oil

Opening Stocks <sup>3/</sup>	150	120	84	84	86
Production	315	298	327	367	360
Disappearance <sup>4/</sup>	345	334	327	365	350
Ending Stocks <sup>3/</sup>	120	84	84	86	96

Tallow & Greases

Opening Stocks <sup>3/</sup>	436	437	482	520	514
Production	5 664	5 944	6 049	6 050	6 100
Disappearance <sup>4/</sup>	5 643	5 899	6 011	6 056	6 070
Ending Stocks <sup>3/</sup>	437	482	520	514	544

Tung Oil

Opening Stocks <sup>3/</sup>	30	20	17	19	21
Production	108	106	99	101	100
Disappearance <sup>4/</sup>	118	109	97	99	98
Ending Stocks <sup>3/</sup>	20	17	19	21	23

GRAND TOTAL

Opening Stocks <sup>3/</sup>	5 804	6 311	6 208	6 677	7 115
Production	47 667	47 838	50 963	53 658	55 595
Total Supplies	53 471	54 149	57 171	60 335	62 710
Disappearance <sup>4/</sup>	47 160	47 941	50 494	53 222	54 545
Ending Stocks <sup>3/</sup>	6 311	6 208	6 677	7 115	8 165

FOOTNOTES TO

MAJOR OILS & FATS: WORLD PRODUCTION, DISAPPEARANCE, AND STOCKS<sup>1/</sup>

<sup>1/</sup> October - September

<sup>2/</sup> Preliminary

<sup>3/</sup> Estimated

<sup>4/</sup> Estimated of the balance

SOURCE: Oil World, Hamburg, November 16, 1979

Table 3

WORLD PRODUCTION OF OILMEALS <sup>1/</sup>

(Thousand Tonnes)

	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u> <sup>2/</sup>	<u>1978/79</u> <sup>3/</sup>
Soybean Meal	36 917	44 683	43 545	50 959	54 678
Cottonseed Meal	9 788	8 416	9 079	10 109	9 887
Groundnut Meal	3 605	4 429	3 835	3 665	4 002
Sunflower Meal	4 408	3 936	4 017	5 099	5 343
Rapeseed Meal	3 894	4 149	4 459	4 322	5 394
Sesame Meal	766	722	724	783	821
Copra Meal	1 460	1 805	1 600	1 659	1 506
Palm Kernel Meal	554	591	632	581	681
Linseed Meal	1 166	1 244	1 373	1 463	1 472
Fishmeal & Solubles	<u>4 586</u>	<u>4 531</u>	<u>4 234</u>	<u>4 338</u>	<u>4 647</u>
GRAND TOTAL	<u>67 144</u>	<u>74 506</u>	<u>73 497</u>	<u>82 977</u>	<u>88 431</u>

<sup>1/</sup> October-September crop year.

<sup>2/</sup> Preliminary

<sup>3/</sup> Estimated

SOURCE: "Oil World", Hamburg, November 16, 1979.

### CHAPTER 3

#### CANADIAN OILSEED PRODUCTION, PROCESSING AND TRADE IN FATS AND OILS

##### Canadian Oilseeds: Area, Yield, Production

Rapeseed production increased slightly in 1979 due to a larger seeded area. The yield declined slightly and the total production was only slightly more than in 1978.

Flaxseed production increased sharply to 835 700 tonnes due to a larger seeded area. The average yield declined by about 10 per cent compared to 1978.

Soybean production increased due to a slightly larger seeded area coupled with an excellent average yield.

Sunflowerseed production nearly doubled in 1979 due to an increase in seeded area.

Mustardseed production declined in 1979 in line with a decreased production area and a lower average yield.

##### Canadian Oilseed Processing

There were increases in the volume of oilseeds processed in Canada in the crop year 1978/79 compared to the previous crop year. Rapeseed showed a large increase to 725 100 tonnes. Soybeans showed a smaller increase to 742 600 tonnes. Data for flaxseed and sunflowerseed is not available.

##### Canadian Imports of Fats and Oils

Imports of edible vegetable oils declined in 1979, reflecting the increased availability of domestically - produced rapeseed and soybean oils. Total fats and oils imports declined to 129 607 tonnes in 1979, compared to 149 469 tonnes in 1978.

##### Canadian Exports of Fats and Oils

Exports of edible vegetable oils increased in 1979, mainly because of larger rapeseed oil exports. Total exports of 307 961 tonnes included 149 267 tonnes of inedible tallow.

[illegible]

	Production					Oil Equivalent				
	(Tonnes)					(Tonnes)				
Flaxseed	567	324	596	518	927	788	857	1 091	1 040	902
Rapeseed	1 628	720	1 453	2 806	3 439	1 002	1 165	1 359	1 201	1 035
Soybeans	158	153	202	263	283	2 318	1 628	2 546	1 802	2 373
Mustardseed	66	22	74	98	62	746	983	1 058	1 036	860
Sunflowerseed	25	20	68	87	164	1 172	1 166	1 167	1 290	1 347
Flaxseed	444 613	276 900	650 300	538 500	835 700	157 361	105 209	230 206	190 629	295 838
Rapeseed	1 723 668	836 900	1 973 100	3 349 700	3 560 700	722 217	350 661	826 729	1 403 524	1 491 933
Soybeans	366 808	250 400	517 100	475 134	671 700	66 025	45 072	93 078	85 524	120 906
Mustardseed	50 122	35 200	79 380	103 420	53 300	-	-	-	-	-
Sunflowerseed	29 937	24 000	80 967	113 853	220 900	11 975	9 600	32 387	45 541	88 360

Flaxseed.....	35.4%
Rapeseed.....	41.9%
Soybeans.....	18.0%
Mustardseed....	Not Applicable
Sunflowerseed..	40.0%

CANADIAN OILSEED PRODUCTION BY PROVINCE

	<u>A R E A</u>			<u>Y I E L D</u>			<u>P R O D U C T I O N</u>		
	(Thousand Hectares)			(Kilograms per Hectare)			(tonnes)		
	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
<u>FLAXSEED</u>									
Manitoba	304	304	506	1 086	1 044	929	330 217	317 517	469 900
Saskatchewan	243	182	324	1 118	1 117	800	271 794	203 211	259 100
Alberta	49	32	97	485	1 191	1 100	48 263	38 102	106 700
<u>RAPESEED</u>									
Manitoba	202	425	567	1 437	1 361	1 160	290 302	578 336	657 700
Saskatchewan	587	1 133	1 335	1 430	1 281	960	839 155	1 451 510	1 281 400
Alberta	627	1 170	1 416	1 284	1 182	1 049	805 135	1 383 471	1 485 500
British Columbia	36	73	121	1 071	839	1 125	38 556	61 236	136 100
<u>SOYBEANS</u>									
Ontario	202	263	283	2 610	1 807	2 373	527 366	475 138	671 700
<u>SUNFLOWERSEED</u>									
Manitoba	67	82	154	1 185	1 328	1 355	79 379	108 863	208 700
Saskatchewan	-	-	10	-	-	1 220	-	-	12 200
<u>MUSTARDSEED</u>									
Manitoba	16	25	10	1 021	1 161	950	16 330	29 030	9 500
Saskatchewan	40	53	38	1 191	950	795	47 628	50 349	30 200
Alberta	17	20	14	907	1 202	971	15 422	24 041	13 600



Table 6

CANADIAN IMPORTS OF FATS AND OILS

(Tonnes)

PRIMARILY EDIBLE

<u>Vegetable Oils</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Soybean Oil	20 881	31 205	28 138	28 069	22 234
Cottonseed Oil	11 289	5 200	5 497	4 723	4 285
Corn Oil	10 172	16 418	15 482	19 707	16 627
Peanut Oil	6 848	6 734	6 845	6 460	5 461
Coconut Oil	25 816	29 647	24 218	22 313	25 712
Palm Oil	41 283	55 001	31 179	23 205	18 366
Palm Kernel Oil	5 093	10 351	7 192	7 252	8 807
Olive Oil	1 987	5 096	4 840	2 814	2 676
Cocoa Butter	4 362	5 008	4 835	3 562	3 495
Sunflowerseed Oil	170	271	59	171	460
Vegetable Oils & Fats NES	2 965	3 156	2 270	3 235	2 032
Vegetable Cooking Fats & Packaged Salad Oils	693	144	423	163	23
 TOTAL	 131 559	 168 231	 130 978	 121 674	 110 178
 <u>Animal Fats</u>					
Lard	12 118	19 246	17 841	13 106	10 751
Butter <sup>1/</sup> <sub>-</sub>	4 565	12	13	4 165	6
 TOTAL	 16 683	 19 258	 17 854	 17 271	 10 756
 <u>Marine Oils</u>					
Fish & Marine Oil	879	299	410	654	308
 TOTAL	 879	 299	 410	 654	 308
 TOTAL EDIBLE OILS AND FATS	 149 121	 187 788	 149 242	 139 599	 121 242

<u>PRIMARILY INEDIBLE</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Castor Oil	1 909	1 313	1 311	1 684	1 721
Tung Oil	692	734	699	680	640
Inedible Tallow <sup>2/</sup>	1 668	832	590	398	1 483
Animal Oil & Fats	487	652	568	4 810	1 186
Animal Grease <sup>3/</sup>	4 154	1 700	1 790	2 298	3 335
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL INEDIBLE OILS & FATS	8 910	5 231	4 958	9 870	8 365
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL EDIBLE & INEDIBLE FATS & OILS IMPORTS	158 031	194 332	154 200	149 469	129 607
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

<sup>1/</sup> Butter imports have been converted to oil equivalent, using the factor of 81 per cent.

<sup>2/</sup> This class includes both edible and inedible tallow. The proportions are not known.

<sup>3/</sup> This category includes Animal Grease, NES and Wool Grease and Lanolin.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 7

CANADIAN EXPORTS OF FATS AND OILS

(Tonnes)

PRIMARILY EDIBLE

<u>Vegetable Oils</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Soybean Oil	2 074	--	23	1 406	9 626
Rapeseed Oil	19 811	42 501	102 700	82 348	119 476
Margarine & Shortening	268	706	634	1 559	955
Vegetable Oil & Fats	944	6 974	1 413	3 512	7 220
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	23 097	50 181	104 770	88 825	137 277
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

Animal Fats

Butter (Oil Equiv.) <sup>1/</sup>	23	2 861	273	189	16
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	23	2 861	273	189	16
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

Marine Oils

Herring Oil	2 277	5 315	4 124	3 679	6 274
Whale Oil	--	5	14	11	--
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	2 277	5 320	4 138	3 690	6 274
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

PRIMARILY INEDIBLE

Linseed Oil	3 562	5 108	5 717	8 099	4 650
Inedible Tallow <sup>2/</sup>	97 871	109 884	140 829	138 053	149 267
Marine Oils <sup>3/</sup>	2 615	4 789	11 902	5 707	5 166
Animal Fats & Oils	1 463	3 282	6 931	5 062	5 311
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL INEDIBLE FATS AND OILS	105 511	123 063	165 379	156 921	164 394
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL EDIBLE AND INEDIBLE FATS AND OILS	130 900	181 425	274 560	249 625	307 961
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

FOOTNOTES TO

CANADIAN EXPORTS OF FATS AND OILS

- 1/ Butter exports have been converted to oil equivalent, using the factor of 81%.
- 2/ This class includes both edible and inedible tallow. The proportions are not known.
- 3/ Marine oil exports listed under "Inedible Oils" include sun-rotted cod liver oil, a non-specified group of fish and marine oil, and fish liver and visceral oils. While most of these oils can be assumed to be of an inedible grade, a small quantity of edible soy may have been included.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 8

CANADIAN CRUSHINGS OF VEGETABLE OILSEEDS AND

PRODUCTION OF OIL AND MEAL BY CROP YEAR

(Tonnes)

<u>CRUSHINGS</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
Flaxseed	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>
Rapeseed	275 973	347 161	549 714	630 300	725 100
Soybeans	635 110	722 988	684 995	728 400	742 600
Sunflowerseed	7 134	20 029	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>
TOTAL	918 217	1 090 178	1 234 709	1 358 700	1 467 700
<u>OIL PRODUCTION</u>					
Flaxseed	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>
Rapeseed	108 483	141 698	225 805	259 000	296 300
Soybeans	108 344	122 694	115 616	125 600	129 000
Sunflowerseed	2 671	8 328	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>
TOTAL	219 498	272 720	341 421	384 600	425 300
<u>MEAL PRODUCTION</u>					
Flaxseed	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>
Rapeseed	157 763	197 376	314 903	357 500	416 700
Soybeans	499 183	569 467	540 689	575 400	576 700
Sunflowerseed	2 553	7 266	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>	x <sup>1/</sup> <sub>-</sub>
TOTAL	659 499	774 109	855 592	932 900	993 400

<sup>1/</sup>  
- Confidential - to meet secrecy requirements  
of the Statistics Act

SOURCE: Statistics Canada, Catalogue No. 22-007

## CHAPTER 4

### THE CANADIAN RAPESEED SITUATION

#### Canadian Rapeseed Production

In response to market demand and favourable prices, rapeseed production in the crop year 1978/79 reached a record level of 3 497 100 tonnes, almost double the previous year's production. Starting stocks were up slightly from the previous year.

Domestic crushings increased over the previous year as did exports of seed and oil, but exports of rapeseed meal dropped approximately 5 per cent to 162 500 tonnes.

#### Exports of Rapeseed

Exports of rapeseed increased approximately 65 per cent to 1 988 267 tonnes. Japan purchased 1 157 771 tonnes, and was again our major market.

#### Exports of Rapeseed Oil

Exports of rapeseed oil for 1979 were 4 597 tonnes above 1978 level of 114 879 tonnes. India received over 70 000 tonnes while Chile, Japan, Algeria and Hong Kong were also important markets.

#### Exports of Rapeseed Meal

Although exports of rapeseed meal declined approximately 5 per cent, to 162 500 tonnes in 1979, the value of the rapeseed meal increased 11 per cent over 1978 levels to \$27,931,000.

Table 9

CANADIAN SUPPLY AND DISPOSITION OF RAPESEED

RAPESEED OIL AND RAPESEED MEAL

(Crop Year)

<u>RAPESEED</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
			(Tonnes)		
Stocks, Starting	280 912	399 913	1 048 648	199 000	325 000
Production	1 163 476	1 748 616	836 886	1 973 100	3 497 100
Exports	592 987	683 026	1 017 871	1 013 600	1 642 295
Domestic Crashings	275 968	347 160	549 714	630 300	725 100

RAPESEED OIL

Exports	19 240	32 633	91 648	73 500	109 969
Domestic Production	108 483	141 698	225 806	259 000	290 040

RAPESEED MEAL

Exports	10 672	27 984	107 088	156 300	172 476
Domestic Production	157 763	197 376	314 903	357 500	416 933

SOURCE: Statistics Canada, Catalogue No. 22-007.



Table 10

CANADIAN EXPORTS OF RAPESEED

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Algeria	--	--	38 266	74 498	43 986
Australia	--	--	5	--	18
Bangladesh	47 688	25 662	17 530	28 969	13 151
Belgium-Luxembourg	508	--	248	1 000	750
Brazil	--	--	27	1	89 600
Czechoslovakia	--	--	--	2 500	2 490
Denmark	--	--	18	73	--
Finland	--	103	82	116	44
France	--	--	1 519	755	38 676
Germany, West	5 651	15 058	66 843	50 364	232 532
India	14 142	--	13 650	207 013	18 823
Italy	2 008	2 956	1 930	--	15 080
Japan	579 385	687 076	746 082	801 229	1 157 771
Korea, South	--	7 268	--	162	38 152
Morocco	--	--	--	--	24 155
Netherlands	18 426	16 682	111 876	36 545	275 488
Singapore	--	--	12 887	--	--
Spain	919	4	70	253	1 244
Sweden	56	211	104	1	--
Switzerland	3 953	--	--	2 794	--
United Kingdom	3 324	13 358	5 884	1 365	11 091
United States	123	6 491	563	466	316
USSR	--	--	--	--	24 898
Venezuela	9	--	--	27	--
Other	--	--	10 359	1	2
<hr/> TOTAL	<hr/> 676 199	<hr/> 774 873	<hr/> 1 027 943	<hr/> 1 208 132	<hr/> 1 988 267
<hr/> TOTAL VALUE (\$'000)	<hr/> 223 549	<hr/> 185 971	<hr/> 310 047	<hr/> 369 549	<hr/> 631 446

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 11

CANADIAN EXPORTS OF RAPESEED OIL

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Algeria	--	--	3 216	--	6 030
Australia	122	--	2 917	3 314	3 348
Bangladesh	--	5 542	7 000	9 014	2 698
Chile	--	--	--	500	12 178
Ecuador	--	--	504	--	--
Egypt	--	745	2 160	--	--
Germany, West	--	--	2 217	--	--
Haiti	--	--	2 434	--	--
Hong Kong	590	2 069	5 133	5 592	5 987
India	9 438	23 248	66 794	78 525	70 069
Japan	3 019	8 481	6 415	12 516	8 665
Khmer Rep.-Laos	--	--	--	14	--
Lebanon	--	290	650	--	--
Leeward-Windward Is.	--	--	--	14	14
Madagascar	--	--	284	--	--
Mexico	--	--	--	178	938
Morocco	--	--	--	2 818	3 528
Mozambique	--	--	--	515	--
New Zealand	--	--	--	118	121
Pakistan	--	--	--	7	170
Singapore	--	--	--	--	696
South Korea	--	--	--	104	1 600
United States	963	2 124	2 064	1 650	2 607
Zambia	--	--	--	--	149
Other Countries	5 678	--	1 002	--	678
TOTAL	<u>19 811</u>	<u>42 501</u>	<u>102 700</u>	<u>114 879</u>	<u>119 476</u>
TOTAL VALUE (\$'000)	<u>15 683</u>	<u>23 081</u>	<u>61 907</u>	<u>66 489</u>	<u>85 073</u>

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 12

CANADIAN EXPORTS OF RAPESEED OILCAKE AND MEAL

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Chile	--	--	--	--	3 836
Germany, West	1 965	4 686	57 565	94 005	56 932
Ireland	--	--	1 000	--	950
Japan	--	121	4 001	11 822	108
Korea, South	--	--	--	--	3 849
Netherlands	5 756	26 941	7 967	6 209	3 382
Norway	--	--	24 395	30 666	51 054
Taiwan	--	--	2 051	5 699	--
United Kingdom	12 392	16 127	21 968	21 597	35 564
United States	552	3 696	8 232	992	6 792
Other	--	--	9 212	--	33
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	20 666	51 573	136 393	170 990	162 500
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	2 115	6 089	19 639	25 056	27 931
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-004

QUALITY DATA FOR WESTERN CANADIAN RAPESEED, SURVEY SAMPLES OF 1978 AND 1979 CROPS

WESTERN CANADA	1978 Survey				1979 Survey			
	Oil <sup>1/</sup> Content	Erucic <sup>2/</sup> Acid Content	Protein <sup>3/</sup> Content	No. of Samples	Oil <sup>1/</sup> Content	Erucic <sup>2/</sup> Acid Content	Protein <sup>3/</sup> Content	No. of Samples
No. 1 CRS	41.3	1.4	36.8	432	41.8	--	38.2	313
No. 2 CRS	41.1	0.9	38.8	51	41.5	--	39.9	60
No. 3 CRS	40.1	1.4	40.7	7	41.7	--	42.3	15
All Grades	41.3	1.3	37.1	490	41.7	1.3	38.6	393
ALL GRADES BY PROVINCES								
Manitoba	41.5	0.6	37.6	90	41.9	0.7	39.6	85
Saskatchewan	41.9	0.8	37.5	204	42.1	1.0	39.3	164
Alberta	40.5	2.2	36.4	196	41.1	2.1	37.2	144

1/ Oil content of seed is reported on an 8.5% moisture basis.

2/ Expressed as percent of total fatty acids in the oil.

3/ Protein content is reported on the oil-free meal and an 8.5% moisture basis.

Table 14

SUMMERFALLOW AND STUBBLE CULTIVATION OF RAPESEED

<u>Seeded Area</u>	<u>Summer- fallow</u>	<u>Stubble</u>	<u>Total</u>
- hectares -			
1975	1 282 881	437 070	1 719 951
1976	700 526	153 379	853 905
1977	978 146	438 284	1 425 430
1978	1 809 389	922 298	2 731 687
1979	2 029 000	1 289 000	3 318 000

<u>Distribution</u>	- per cent -		
1975	75	25	100
1976	78	22	100
1977	69	31	100
1978	66	34	100
1979	61	39	100

<u>Average Yield Per Seeded Hectare</u>	- tonnes per hectare -		
1975	1.065	0.824	1.003
1976	1.244	0.875	1.166
1977	1.451	1.171	1.368
1978	1.306	1.138	1.250
1979	1.063	.984	1.032

<u>Production</u>	- tonnes -		
1975	1 363 059	360 609	1 723 668
1976	691 735	133 811	825 546
1977	1 422 027	512 565	1 934 592
1978	2 363 240	1 050 077	3 413 317
1979	2 156 000	1 269 000	3 425 000

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 15

RAPESEED VARIETIES, ACREAGE SEEDED AND PERCENTAGE OF  
EACH VARIETY BY PRAIRIE PROVINCES - 1979

VARIETY	SASKATCHEWAN		ALBERTA		MANITOBA		PRAIRIES	
	%	Acres ( '000s)	%	Acres ( '000s)	%	Acres ( '000s)	%	Acres ( '000s)
Altex	0.6	20.3	1.2	42.2	-	-	0.8	62.5
Candle	12.6	417.0	46.4	1,623.6	2.1	29.6	25.3	2,070.2
Midas	11.9	391.8	0.9	33.4	6.0	83.7	6.2	508.9
Regent	26.5	875.6	6.1	213.2	41.3	577.8	20.3	1,666.6
Span	-	-	0.8	27.2	0.6	8.4	0.4	35.6
Torch	18.3	604.6	32.4	1,134.6	20.6	288.2	24.7	2,027.4
Tower	27.2	895.6	11.3	394.1	29.2	408.8	20.7	1,698.5
R-500	0.7	22.6	-	-	-	-	0.3	22.6
Others	2.2	72.5	0.9	31.7	0.2	3.5	1.3	107.7
TOTAL	100.0	3,300.0	100.0	3,500.0	100.0	1,400.0	100.0	8,200.0

SOURCE: Based on data supplied by the three Pools  
and by the Prairie Department of Agriculture.

Table 16

CANADIAN RAPESEED PRICES <sup>1/</sup>  
(Crop Year)

<u>M O N T H</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
	..... \$ per tonne .....				
August	362.00	293.65	232.37	264.20	295.93
September	375.44	262.35	246.03	277.56	313.04
October	421.30	235.01	226.19	285.45	310.50
November	397.71	218.26	255.73	285.45	315.21
December	358.03	194.45	242.07	270.59	315.14
January	322.75	199.30	254.85	281.31	314.86
February	281.75	206.35	347.44	292.15	337.94
March	273.37	205.25	313.94	318.50	327.87
April	283.51	201.06	365.08	337.45 <sup>2/</sup>	303.91
May	250.66	211.20	369.05	340.97	309.07
June	240.30	238.32	334.88	323.90	322.12
July	259.04	255.95	279.98	287.16	326.76
Yearly Average	<u>318.79</u>	<u>226.63</u>	<u>288.80</u>	<u>298.06</u>	<u>316.03</u>

<sup>1/</sup> Winnipeg Grain Exchange No. 1 Canadian Rapeseed,  
basis in-store Thunder Bay, \$/tonne.

<sup>2/</sup> As of April 1, 1978, basis in-store Vancouver,  
\$/tonne.

SOURCE: Statistics Canada, Catalogue Nos. 22-006  
and 22-007.



## CHAPTER 5

### THE CANADIAN SOYBEAN SITUATION

#### Supply and Disposition - Soybeans

Canadian production of soybeans in 1979 was 671 700 tonnes compared to 475 134 tonnes in 1978. For the crop year 1978/79, soybean imports amounted to 350 400 tonnes, exports were 90 900 tonnes and the domestic crush volume was 742 600 tonnes.

#### Soybean Oil

Imports of soybean oil declined during the 1978/79 crop year, exports increased slightly, and domestic production showed a small increase to 129 000 tonnes.

#### Soybean Meal

Imports of soybean meal increased sharply in 1978/79 to 480 300 tonnes versus 376 300 tonnes in 1977/78. Exports of soybean meal declined, and the domestic production was virtually unchanged at 576 700 tonnes.

Table 17

CANADIAN SUPPLY AND DISPOSITION OF SOYBEANS,

SOYBEAN OIL AND SOYBEAN MEAL

(Crop Year)

<u>SOYBEANS</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
	(Tonnes)				
Production	300 457	366 808	250 384	527 361	515 600
Imports	344 273	371 026	391 608	262 835	350 400
Exports	9 498	22 289	24 820	64 173	90 900
Domestic Crushings	635 096	722 975	684 995	728 400	742 600
<u>SOYBEAN OIL</u>					
Imports	19 557	30 810	26 704	28 100	26 100
Exports	5 587	1 043	--	1 400	1 800
Domestic Production	108 344	122 694	115 616	125 600	129 000
<u>SOYBEAN MEAL</u>					
Imports	271 149	343 814	339 244	376 300	480 300
Exports	83 527	69 335	51 333	45 600	41 300
Domestic Production	499 183	569 467	540 689	575 400	576 700

SOURCE: Statistics Canada, Catalogue Nos. 22-006, 22-007  
and unpublished data.

Table 18

CANADIAN IMPORTS OF SOYBEANS AND SOYBEAN OIL

Soybeans

-Tonnes-

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Chile	--	--	--	--	4
Germany, West	1	--	--	--	--
Hong Kong	3	17	6	17	44
Japan	4	--	8	--	--
People's Republic of China	13	--	9	57	51
Singapore	--	--	4	2	2
United Kingdom	--	--	8	--	--
United States	385 444	397 560	317 935	324 369	350 991
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	385 465	397 577	317 970	324 445	351 092
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	86 210	81 136	98 953	91 245	107 807
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

Soybean Oil

-Tonnes-

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
France	1	--	--	--	--
United States	20 881	31 205	28 138	28 069	22 234
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	20 882	31 205	28 138	28 069	22 234
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

IMPORTS OF SOYBEAN OIL BY PROVINCE

	1 9 7 5		1 9 7 6		1 9 7 7		1 9 7 8		1 9 7 9	
	<u>Tonnes</u>	<u>'000 of \$</u>	<u>Tonnes</u>	<u>'000 of \$</u>	<u>Tonnes</u>	<u>'000 of \$</u>	<u>Tonnes</u>	<u>'000 of \$</u>	<u>Tonnes</u>	<u>'000 of \$</u>
Nova Scotia	1	1/	10	6	--	--	--	--	1	1/
New Brunswick	1 614	1 267	1 036	545	1 199	791	1 773	1 351	1 163	1 043
Quebec	1 490	822	2 056	788	436	282	936	752	205	187
Ontario	11 681	8 196	17 767	8 396	16 367	10 321	14 796	10 156	11 916	9 140
Manitoba	2 752	1 572	4 646	1 865	4 160	2 191	2 563	1 585	2 285	1 558
Saskatchewan	250	155	225	100	490	264	157	104	552	380
Alberta	343	236	1 931	734	3 246	1 896	5 489	3 526	4 163	2 899
British Columbia	2 747	2 142	3 532	1 783	2 238	1 468	2 355	1 596	1 950	1 502
TOTAL	20 881	14 394	31 205	14 222	28 137	17 216	28 069	19 070	22 234	16 710

1/ Less than \$1,000.

SOURCE: Statistics Canada, Unpublished Data.

Table 20

## IMPORTS OF SOYBEAN MEAL BY PROVINCE

	1 9 7 5		1 9 7 6		1 9 7 7		1 9 7 8		1 9 7 9	
	Tonnes	'000 of \$	Tonnes	'000 of \$	Tonnes	'000 of \$	Tonnes	'000 of \$	Tonnes	'000 of \$
Newfoundland	129	18	--	--	--	--	--	--	--	--
Nova Scotia	3 288	521	19	3	2 913	679	130	32	64	58
New Brunswick	129	18	5 569	1 369	7 797	2 418	9 729	2 998	11 401	3 981
Quebec	91 146	20 062	118 447	25 368	99 456	26 329	103 390	28 260	101 246	30 393
Ontario	49 312	8 574	57 881	12 891	84 149	21 713	114 857	28 222	153 275	43 402
Manitoba	63 070	9 975	69 789	12 250	68 543	16 507	86 357	19 517	95 377	24 942
Saskatchewan	17 808	3 134	16 740	3 227	20 127	5 235	20 806	5 022	33 915	9 776
Alberta	37 904	6 273	42 521	7 120	38 634	9 564	46 306	11 501	49 976	13 168
British Columbia	31 554	5 622	37 896	7 810	29 681	7 861	31 083	7 501	19 303	5 563
TOTAL	50 853	294 343	54 209	348 865	351 302	90 310	412 656	103 093	464 557	131 263

SOURCE: Statistics Canada, Unpublished Data.

Table 21

CANADIAN EXPORTS OF SOYBEANS

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Belgium-Luxembourg	--	--	--	--	18
Denmark	--	--	--	18	--
France	490	73	75	8 749	195
Hong Kong	2 192	5 111	6 502	14 291	7 876
Hungary	--	--	3	--	--
Jamaica	4	--	--	--	--
Japan	3 041	6 825	10 976	34 940	6 498
Malaysia	--	209	227	1 744	394
Netherlands	--	--	3 941	5 463	609
Philippines	--	125	--	--	--
Romania	--	--	1 008	--	--
Singapore	1 020	9 667	2 950	13 027	26 416
Spain	213	--	8 885	--	--
Taiwan	--	--	397	--	--
United Kingdom	30	80	246	--	--
United States	46	351	94	30	593
Yugoslavia	160	--	--	--	--
Other Countries <sup>1/</sup>	--	2 199	2 533	5 808	4 320
TOTAL	8 710	24 653	37 837	84 152	46 919
TOTAL VALUE (\$'000)	2 812	6 100	11 047	24 375	14 869

<sup>1/</sup> To protect confidentiality  
under the Statistics Act.

Table 22

CANADIAN EXPORTS OF SOYBEAN OIL AND MEAL

(Tonnes)

S O Y B E A N   O I L

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Morocco	--	--	--	--	2 911
Netherlands	--	--	--	1 406	3 004
United Kingdom	1 965	--	--	--	787
United States	92	--	23	--	6
Venezuela	--	--	--	--	2 916
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	2 076	--	23	1 406	9 626
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	1 391	--	12	742	6 966
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

S O Y B E A N   M E A L

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Denmark	--	--	6 748	2 956	--
Germany, West	--	28	3 790	--	--
Hong Kong	--	--	--	800	163
Netherlands	--	--	--	1 001	--
United Kingdom	57 269	59 653	34 333	41 929	21 581
United States	1 723	987	718	1 622	853
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	58 993	62 711	45 589	48 308	22 951
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	9 435	11 272	10 747	12 436	6 776
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-004



Table 23

CANADIAN SOYBEAN PRICES <sup>1/</sup>

(Crop Year)

<u>M O N T H</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
	..... \$ per tonne .....				
August	263.17	219.22	211.96	207.49	257.86
September	267.03	200.48	227.76	185.63	250.90
October	298.17	175.40	211.09	187.44	273.58
November	265.93	159.83	221.38	187.43	270.43
December	249.21	154.60	243.97	215.75	276.95
January	217.06	160.34	248.43	209.95	277.73
February	186.01	162.36	260.69	205.98	303.40
March	185.28	160.98	304.65	243.13	306.70
April	193.77	160.84	344.51	259.88	297.29
May	177.10	176.83	347.45	273.40	295.20
June	179.40	214.03	298.82	266.61	321.21
July	<u>199.47</u>	<u>224.68</u>	<u>224.82</u>	<u>256.72</u>	<u>308.36</u>
Yearly Average	<u>223.49</u>	<u>180.82</u>	<u>262.25</u>	<u>226.98</u>	<u>286.83</u>

<sup>1/</sup> Buying prices, carlots, fob Chatham,  
No. 2 and better.

SOURCE: Statistics Canada, Catalogue  
No. 22-006.

## CHAPTER 6

### THE CANADIAN FLAXSEED SITUATION

#### Flaxseed Production

Flaxseed production for 1979 was 835 700 tonnes, an increase of 46 per cent over 1978 production of 571 500 tonnes. During 1979 seeded area increased but average yields decreased.

#### Exports of Flaxseed

Exports of flaxseed increased by 125 408 tonnes over 1978 to 534 825 tonnes in 1979. The value of these shipments increased by approximately 64 per cent during the same period. As in previous years, Japan and Europe were our major markets.

#### Exports of Linseed Oil and Meal

Exports of linseed oil decreased by 3 449 tonnes during 1979 to a level of 4 650 tonnes. Similarly, exports of linseed meal decreased to 4 518 tonnes in 1979, from 5 583 tonnes in 1978.

Table 24

CANADIAN SUPPLY AND DISPOSITION OF FLAXSEED,

LINSEED OIL AND LINSEED MEAL

(Crop Year)

	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
	- tonnes -				
<u>FLAXSEED</u>					
Stocks, Starting <sup>1/</sup>	200 950	218 578	380 640	280 400	470 000
Production	350 538	444 523	276 875	402 400	571 500
Imports	406	-	<sup>3/</sup>	<sup>3/</sup>	98
Exports	267 196	195 107	332 708	337 500	538 369
Domestic Crushing	<sup>2/</sup> x-	<sup>2/</sup> x-	<sup>2/</sup> x-	<sup>2/</sup> x-	<sup>2/</sup> x-
<u>LINSEED OIL</u>					
Exports	2 184	5 817	4 525	4 597	7 146
Domestic Production	<sup>2/</sup> x-	<sup>2/</sup> x-	<sup>2/</sup> x-	<sup>2/</sup> x-	<sup>2/</sup> x-
<u>LINSEED MEAL</u>					
Exports	196	636	3 679	2 015	5 064
Domestic Production	<sup>2/</sup> x-	<sup>2/</sup> x-	<sup>2/</sup> x-	<sup>2/</sup> x-	<sup>2/</sup> x-

<sup>1/</sup> Total stocks in all positions

<sup>2/</sup> Confidential - to meet secrecy requirements of the Statistics Act

<sup>3/</sup> Less than one tonne

SOURCE: Statistics Canada, Catalogue No. 22-007

Table 25

CANADIAN EXPORTS OF FLAXSEED

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Austria	34	36	--	--	10
Belgium-Luxembourg	2 951	1 763	11 658	20 209	9 215
Czechoslovakia	17 717	3 151	5 836	--	3 001
Denmark	--	--	614	3 849	2 500
France	1 848	508	6 722	17 427	14 168
Germany, West	77 619	81 224	117 479	140 737	161 056
Greece	1 050	1 500	--	--	3 055
Italy	--	--	--	--	1 915
Japan	65 330	90 647	78 984	100 863	99 424
Korea, North	--	--	269	--	--
Korea, South	--	1 750	3 373	3 934	5 351
Netherlands	31 516	11 078	25 799	14 800	111 472
Spain	6 580	8 547	11 315	4 329	6 761
Sweden	72	54	2 279	206	208
Switzerland	108	1 468	9 020	1 118	8 961
Taiwan	--	--	911	6 217	180
United Kingdom	15 573	4 672	13 892	11 724	33 942
United States	3 493	40 198	41 107	23 427	50 929
USSR	--	--	--	--	22 677
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	244 942	246 602	329 366	409 417	534 825
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	83 815	66 278	93 538	102 424	168 788
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 26

CANADIAN IMPORTS OF FLAXSEED

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
United States	337	<sup>1/</sup> —	51	26	98
Other Countries	--	--	18	--	--
	—	—	—	—	—
TOTAL	337	<sup>1/</sup> —	69	26	98
	—	—	—	—	—
TOTAL VALUE (\$'000)	171	--	45	10	42
	—	—	—	—	—

<sup>1/</sup> Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 27

CANADIAN EXPORTS OF LINSEED OIL

(tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Belgium-Luxembourg	1 526	1 965	1 717	1 811	--
Netherlands	1 590	2 848	1 724	1 524	3 468
Switzerland	--	--	--	--	1 007
United Kingdom	398	250	2 241	2 944	--
United States	36	34	27	29	141
Venezuela	7	8	7	20	1
Other Countries	3	1	1	--	33
TOTAL	<u>3 562</u>	<u>5 108</u>	<u>5 717</u>	<u>8 099</u>	<u>4 650</u>
TOTAL VALUE (\$'000)	<u>3 237</u>	<u>2 758</u>	<u>2 786</u>	<u>3 390</u>	<u>2 929</u>

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 28

CANADIAN EXPORTS OF LINSEED CAKE AND MEAL

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Belgium-Luxembourg	--	481	--	--	--
Germany, West	--	3 150	--	--	--
Netherlands	--	--	3 201	3 187	2 785
Trinidad-Tobago	114	60	91	26	18
United States	80	159	1 430	2 370	1 715
	—	—	—	—	—
TOTAL	194	3 875	4 726	5 583	4 518
	—	—	—	—	—
TOTAL VALUE (\$'000)	37	835	741	1 087	1 029
	—	—	—	—	—

SOURCE: Statistics Canada, Catalogue No. 65-004



QUALITY DATA FOR WESTERN CANADIAN FLAXSEED, SURVEY SAMPLES OF 1977, 1978 AND 1979 CROPS

	<u>Oil Content</u> <sup>1/</sup>			<u>Iodine Value</u> (Wijs Units)			<u>Protein Content</u> <sup>2/</sup>			<u>No. of Samples</u>		
	1977	1978	1979	1977	1978	1979	1977	1978	1979	1977	1978	1979
WESTERN CANADA												
No. 1 CW	44.2	43.7	43.1	195	190	195	40.6	41.2	42.6	215	237	115
No. 2 CW	44.4	43.1	42.4	199	191	199	39.7	40.1	40.4	40	16	16
No. 3 CW	44.7	41.6	40.6	201	188	197	40.1	40.8	37.8	27	2	8
All Grades	44.3	43.6	42.9	196	190	195	40.4	41.1	42.1	289	255	139
ALL GRADES												
Manitoba	44.5	43.5	43.0	197	190	196	40.1	40.8	41.9	156	132	32
Saskatchewan	44.2	43.8	42.9	196	190	196	40.4	41.3	42.0	118	104	89
Alberta	43.0	43.4	43.0	190	192	193	44.2	42.7	43.0	15	19	18

1/ Oil Content of seed is reported on moisture-free basis.

2/ Protein Content is reported on oil-free meal and moisture-free basis.

SOURCE: Canadian Grain Commission, Grain Research Laboratory, Winnipeg.

Table 30

SUMMERFALLOW AND STUBBLE CULTIVATION OF FLAXSEED

<u>Seeded Area</u>	<u>Summer- fallow</u>	<u>Stubble</u>	<u>Total</u>
- hectares -			
1975	266 289	300 283	566 672
1976	124 646	199 110	323 756
1977	241 198	333 468	574 666
1978	180 089	337 920	518 009
1979	67 000	439 000	506 000
<hr/>			
<u>Distribution</u>	- per cent -		
1975	47	53	100
1976	38	62	100
1977	42	58	100
1978	35	65	100
1979	13	87	100
<hr/>			
<u>Average Yield</u>	- kg. per hectare -		
1975	918	666	786
1976	1 018	754	855
1977	1 201	962	1 063
1978	1 232	1 000	1 082
1979	1 208	1 016	1 046
<hr/>			
<u>Production</u>	- tonnes -		
1975	243 852	200 670	444 523
1976	127 006	149 868	276 874
1977	289 575	320 056	609 632
1978	220 992	337 837	558 829
1979	64 000	406 000	470 000

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 31

FLAXSEED VARIETIES, ACREAGE SEEDED AND PERCENTAGE OF  
EACH VARIETY BY PRAIRIE PROVINCES - 1979

VARIETY	SASKATCHEWAN		ALBERTA		MANITOBA		PRAIRIES	
	%	Acres ( '000s)	%	Acres ( '000s)	%	Acres ( '000s)	%	Acres ( '000s)
Culbert	-	-	-	-	5.6	69.9	3.0	69.9
Dufferin	51.1	408.9	-	-	43.3	540.8	41.5	949.7
Linott	8.2	65.3	0.2	0.4	33.4	417.7	21.1	483.4
Noralta	23.2	185.8	46.1	110.6	6.5	81.5	16.5	377.9
Norland	5.9	47.3	-	-	-	-	2.1	47.3
Raja	3.7	29.3	7.1	17.1	4.7	58.7	4.6	105.1
Redwood 65	7.0	56.3	43.5	104.4	6.3	79.4	10.5	240.1
Others	0.9	7.1	3.1	7.5	0.2	2.0	0.7	16.6
TOTAL	100.0	800.0	100.0	240.0	100.0	1,250.0	100.0	2,290.0

SOURCE: Based on data supplied by the three Pools  
and by the Prairie Department of Agriculture.

Table 32

CANADIAN FLAXSEED PRICES <sup>1/</sup>  
(Crop Year)

<u>M O N T H</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
	..... \$ per tonne .....				
August	432.99	336.35	281.18	213.77	238.10
September	461.39	311.00	282.56	218.30	251.94
October	479.95	284.34	274.94	220.15	270.36
November	430.78	258.20	265.83	218.34	268.93
December	420.69	247.48	262.38	209.83	271.14
January	363.17	258.65	273.85	205.30	297.52
February	319.12	257.17	281.83	209.44	345.26
March	308.69	254.32	291.52	230.74	339.31
April	339.10	249.59	333.10	249.53	329.39
May	325.08	258.99	302.69	258.84	324.66
June	307.02	280.84	219.62	249.81	352.18
July	<u>320.95</u>	<u>292.40</u>	<u>242.61</u>	<u>231.02</u>	<u>355.84</u>
Yearly Average	<u>375.67</u>	<u>274.15</u>	<u>274.31</u>	<u>225.97</u>	<u>303.72</u>

<sup>1/</sup> Winnipeg Grain Exchange No. 1 CW Flaxseed  
Basis Thunder Bay.

SOURCE: Statistics Canada, Catalogue Nos.  
22-006 and 22-007.

## CHAPTER 7

### THE CANADIAN SUNFLOWERSEED SITUATION

#### Sunflowerseed Production

Manitoba was again Canada's leading producer of sunflowerseed accounting for 95 per cent of total production. In 1979 production increased by more than 100 000 tonnes from 1978 to a record level of 220 900 tonnes.

#### Exports of Sunflowerseed

Exports of unprocessed sunflowerseed continued to increase in 1979 to a level of 89 231 tonnes, 15 112 tonnes higher than in 1978. West Germany and the USA continue to be the principal markets. Total value of the 1979 exports of sunflowerseed was \$25,757,000.

Table 33

CANADIAN SUNFLOWERSEED: ACREAGE, YIELD AND PRODUCTION

(Crop Year)

	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
	<u>- hectares -</u>				
Manitoba	25 091	20 235	66 775	82 153	154 000
Saskatchewan	-	-	-	4 452	10 000
Alberta	-	-	-	-	-
Canada - Total	25 091	20 235	66 775	86 605	164 000
	<u>- yield - kilograms/hectare -</u>				
Manitoba	1 193	1 188	1 188	1 325	1 355
Saskatchewan	-	-	-	1 120	1 220
Alberta	-	-	-	-	-
Canada - Ave.	1 193	1 188	1 188	1 314	1 364
	<u>- production - tonnes -</u>				
Manitoba	29 945	24 047	79 379	108 863	208 700
Saskatchewan	-	-	-	4 990	12 200
Alberta	-	-	-	-	-
Canada - Total	29 945	24 047	79 379	113 853	220 900

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 34

CANADIAN EXPORTS OF SUNFLOWERSEED

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Australia	--	17	15	37	44
Czechoslovakia	--	1 604	6 998	--	--
Denmark	--	18	--	14	29
Germany, West	3 825	3 590	344	43 607	59 553
Netherlands	--	3 001	14 284	17 999	5 380
New Zealand	2	<u>1/</u>	5	2	2
Spain	526	--	--	40	3 458
Sweden	2	4	5	72	75
United Kingdom	34	25	19	340	8 068
United States	874	1 238	2 949	3 913	12 236
Other Countries	<u>2 701</u>	<u>2</u>	<u>1 484</u>	<u>--</u>	<u>386</u>
TOTAL	<u>7 965</u>	<u>9 501</u>	<u>26 103</u>	<u>74 119</u>	<u>89 231</u>
TOTAL VALUE (\$'000)	<u>2 623</u>	<u>3 258</u>	<u>6 225</u>	<u>21 675</u>	<u>25 757</u>

1/ Less than one tonne

SOURCE: Statistics Canada, Catalogue No. 65-004



Table 35

CANADIAN IMPORTS OF SUNFLOWERSEED OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Austria	5	--	--	--	--
United States	160	271	59	164	458
U.S.S.R.	4	--	--	--	--
Other Countries	1	--	--	7	2
	-----	-----	-----	-----	-----
TOTAL	170	271	59	171	460
	-----	-----	-----	-----	-----
TOTAL VALUE (\$'000)	158	147	43	136	343
	-----	-----	-----	-----	-----

SOURCE: Statistics Canada, Catalogue No. 65-007.

## CHAPTER 8

### THE CANADIAN MUSTARDSEED SITUATION

#### Mustardseed Production

Production of mustardseed dropped to 53 300 tonnes in 1979 from 103 448 tonnes in 1978. Our exports of 67 388 tonnes in 1979 were mainly to the traditional markets in Europe, Japan and the USA.

#### Imports of Ground Mustard

The United Kingdom continues to be Canada's major supplier of ground mustard, accounting for over 80 per cent of our 267 tonnes imported during 1979.

Table 36

CANADIAN MUSTARDSEED: ACREAGE, YIELD AND PRODUCTION  
(Crop Year)

	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
	<u>- hectares -</u>				
Manitoba	9 308	7 285	16 188	25 091	10 000
Saskatchewan	30 757	19 020	40 469	52 601	38 000
Alberta	25 911	8 903	16 997	20 234	14 000
Canada - Total	65 965	35 208	73 654	97 936	62 000
	<u>- yield - kilograms/hectare -</u>				
Manitoba	708	899	1 011	1 159	950
Saskatchewan	739	1 004	1 179	959	794
Alberta	808	1 093	910	1 191	971
Canada - Ave.	762	1 004	1 081	1 056	859
	<u>- production - tonnes</u>				
Manitoba	6 578	6 531	16 329	29 038	9 500
Saskatchewan	22 679	19 051	47 627	50 363	30 200
Alberta	20 865	9 707	15 422	24 047	13 600
Canada - Total	50 121	35 289	79 378	103 448	53 300

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 37

CANADIAN EXPORTS OF MUSTARDSEED

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Australia	--	--	22	6	18
Belgium-Luxembourg	114	574	435	--	749
Czechoslovakia	108	35	--	308	--
France	290	181	--	--	--
Germany, West	3 483	2 613	2 157	7 622	6 169
India	--	--	--	2 958	6 596
Japan	9 058	7 517	7 024	6 701	5 369
Mexico	272	108	196	429	449
Netherlands	11 057	9 114	14 138	25 435	17 742
Spain	17	40	--	--	254
Sweden	54	54	--	34	54
Switzerland	430	--	1 108	--	--
United Kingdom	1 253	85	18	171	151
United States	31 659	38 526	31 312	29 378	29 080
Venezuela	24	--	--	32	53
Other Countries	19	21	28	9	704
<b>TOTAL</b>	<b>57 841</b>	<b>58 871</b>	<b>56 438</b>	<b>73 339</b>	<b>67 388</b>
<b>TOTAL VALUE</b> (\$'000)	<b>22 939</b>	<b>20 946</b>	<b>19 660</b>	<b>25 208</b>	<b>21 757</b>

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 38

CANADIAN IMPORTS OF GROUND MUSTARD

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
France	4	--	9	20	18
Germany, West	2	--	--	--	--
Hong Kong	<u>1/</u>	--	<u>1/</u>	--	--
India	<u>1/</u>	--	--	--	1
Taiwan	2	--	--	--	--
United Kingdom	317	169	241	220	221
United States	65	99	98	43	27
	—	—	—	—	—
TOTAL	393	269	349	284	267
	—	—	—	—	—
TOTAL VALUE (\$'000)	522	358	548	625	779
	—	—	—	—	—

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

## CHAPTER 9

### DEODORIZED FATS AND OILS

Canadian production of deodorized oils in 1979 increased by approximately 12 per cent, with deodorized vegetable oils accounting for most of the volume increase. Rapeseed oil usage continued to increase, particularly for shortening and salad oil.

Imports of vegetable oils and fats (NES) decreased sharply, from 3 235 tonnes in 1978 to 2 032 tonnes in 1979. Cocoa butter imports showed little change, coconut oil increased marginally, and corn oil imports declined. Imports of cottonseed oil, olive oil, palm oil and peanut oil declined, while palm kernel oil imports increased.

Exports of vegetable oils and fats (NES) doubled in 1979 to 7 220 tonnes.

CANADIAN PRODUCTION OF DEODORIZED OILS

- tonnes -

	1 9 7 8				1 9 7 9			
	Margarine Oil	Shortening Oil	Salad Oil	Total	Margarine Oil	Shortening Oil	Salad Oil	Total
<u>Vegetable Oils</u>								
Coconut	x	x	x	15 871	x	x	-	x
Corn	x	x	x	24 872	x	x	x	25 284
Cottonseed	x	x	x	x	x	x	x	x
Palm	x	x	x	16 482	x	x	-	x
Peanut	4	x	x	5 940	x	x	x	5 671
Rapeseed	39 825	35 693	55 924	131 442	44 041	55 769	69 152	168 962
Soybean	53 808	47 126	x	116 712	55 515	x	x	122 364
Sunflowerseed	x	2 778	x	14 417	x	x	x	13 528
Other	x	x	-	x	x	x	x	11 065
Total Vegetable Oils	111 361	123 377	99 559	334 297	119 049	150 401	111 087	380 537
<u>Total Animal Oils</u>								
Total Animal Oils	x	x	x	x	x	x	-	53 163
<u>Total Marine Oils</u>								
Total Marine Oils	x	x	x	x	x	x	-	1 605
<u>Total All Oils</u>								
Total All Oils	113 824	161 496	99 559	374 879	122 743	201 475	111 087	435 305

x Confidential to meet secrecy requirements  
of the Statistics Act.

SOURCE: Statistics Canada, Catalogue No. 32-006.



Table 40

CANADIAN IMPORTS OF VEGETABLE OILS AND FATS (NES)

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Austria	10	1	2	--	--
Brazil	14	212	15	60	--
Denmark	146	23	23	4	12
France	1	13	2	1	3
Germany, West	6	6	9	27	6
Greece	545	<u>1</u> /	--	--	--
Hong Kong	31	29	47	66	70
India	<u>1</u> /	6	<u>1</u> /	--	--
Japan	33	47	98	74	90
Netherlands	64	2	1	20	8
New Zealand	--	10	--	--	--
Paraguay	--	--	--	14	--
People's Republic of China	7	14	19	15	4
Singapore	--	2	--	--	3
Switzerland	3	3	6	2	--

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
United Kingdom	572	331	512	258	140
United States	1 521	2 452	1 528	2 690	1 706
Yugoslavia	6	<u>1/</u>	8	22	--
	-----	-----	-----	-----	-----
TOTAL	2 965	3 156	2 270	3 235	2 032
	-----	-----	-----	-----	-----
TOTAL VALUE (\$'000)	3 129	3 069	3 111	3 823	3 290
	-----	-----	-----	-----	-----

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 41

CANADIAN IMPORTS OF COCOA BUTTER

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Belgium-Luxembourg	--	--	--	35	222
Brazil	426	875	416	213	128
Cuba	60	92	75	72	163
Ecuador	--	--	180	--	40
Germany, West	37	--	170	262	663
Ivory Coast	236	299	178	231	108
Jamaica	--	--	10	10	15
Mexico	184	--	--	--	--
Netherlands	1 521	1 612	1 453	1 677	991
Nigeria	--	--	--	100	--
Singapore	--	26	--	--	--
United Kingdom	1 283	1 409	1 714	717	272
United States	613	693	636	245	815
Other Countries	--	--	--	--	78
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	4 362	5 008	4 835	3 562	3 495
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	14 378	16 714	24 618	18 841	22 323
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 42

CANADIAN IMPORTS OF COCONUT OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Australia	2 218	<u>1/</u>	<u>1/</u>	359	--
Brazil	--	--	--	--	299
Fiji	<u>1/</u>	--	--	--	--
Finland	68	--	--	--	--
Germany, West	1	--	--	--	--
Indonesia	--	173	--	--	--
Jamaica	--	2	3	2	4
Malaysia	3 902	1 730	4 664	1 934	5 577
Philippines	7 137	18 623	18 827	15 607	15 480
Sri Lanka	10 540	8 190	156	2 785	2 475
United Kingdom	346	174	1	3	2
United States	1 600	752	567	1 623	1 872
Other Countries	--	--	--	--	3
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	25 816	29 647	24 218	22 313	25 712
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	11 995	10 847	14 447	15 126	28 914
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 43

CANADIAN IMPORTS OF CORN OIL  
(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
United States	10 172	16 418	15 482	19 707	16 627
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	10 172	16 418	15 482	19 707	16 627
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	7 311	8 705	10 612	18 154	14 214
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 44

CANADIAN IMPORTS OF COTTONSEED OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
United States	11 289	5 200	5 497	4 723	4 285
	-----	-----	-----	-----	-----
TOTAL	11 289	5 200	5 497	4 723	4 285
	-----	-----	-----	-----	-----
TOTAL VALUE (\$'000)	7 647	2 863	3 376	3 162	3 402
	-----	-----	-----	-----	-----

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 45

CANADIAN IMPORTS OF OLIVE OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
France	30	28	15	35	23
Greece	417	162	107	218	311
Italy	611	525	737	920	915
Portugal	150	106	155	162	169
Spain	709	2 132	3 750	1 266	1 111
United States	29	2 117	62	213	147
Other Countries	40	25	14	--	--
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	1 986	5 096	4 840	2 814	2 676
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	4 161	4 646	3 406	4 923	5 941
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.



Table 46

CANADIAN IMPORTS OF PALM OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Indonesia	13 085	20 592	15 249	16 254	9 946
Ivory Coast	1 385	--	--	--	--
Malaysia	23 675	31 800	13 972	5 840	6 186
Netherlands	--	--	8	508	--
Philippines	--	250	--	--	--
Singapore	509	1	--	--	1 025
United States	2 627	2 354	1 941	573	1 199
Other Countries	--	2	9	30	10
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	41 283	55 001	31 179	23 205	18 366
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	19 547	19 285	17 142	14 763	13 608
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 47

CANADIAN IMPORTS OF PALM KERNEL OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Denmark	--	--	7	16	15
Indonesia	473	2 223	3 905	1 605	1 002
Malaysia	3 966	4 685	2 941	4 552	7 134
Netherlands	13	10	--	--	--
Singapore	--	44	--	250	--
United States	640	3 388	339	845	655
Other Countries	--	--	--	--	1
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	5 092	10 351	7 192	7 252	8 807
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	2 565	3 174	3 236	5 387	9 182
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 48

CANADIAN IMPORTS OF PEANUT OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Brazil	2 444	3 602	604	--	1 498
Hong Kong	97	52	40	52	38
Nicaragua	--	693	--	--	--
Senegal	507	--	--	--	--
United States	3 095	2 381	6 201	6 393	3 922
Other Countries	703	--	--	9	3
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	6 846	6 734	6 845	6 460	5 461
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	5 950	4 252	5 582	6 964	5 761
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 49

CANADIAN EXPORTS OF VEGETABLE OILS & FATS (NES)

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Barbados	10	13	46	53	138
Colombia	--	443	--	--	--
Cuba	183	4	3	3	3
Emirates, UA	--	13	--	--	11
France	--	--	--	--	2 044
Germany, West	--	2 205	3	--	1
Guyana	6	2	4	383	--
Haiti	111	--	--	--	--
Leeward-Windward Is.	63	45	100	41	190
Netherlands	--	--	57	41	2 475
Saudi Arabia	99	3 156	32	15	--
Trinidad-Tobago	29	120	159	2 059	789
United Kingdom	71	125	66	47	28
United States	364	811	855	703	1 468
Other Countries	8	37	88	167	73
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	944	6 974	1 413	3 512	7 220
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	512	1 914	918	1 915	5 530
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-004.

CHAPTER 10

SPECIFIED FATS AND OILS

According to Statistics Canada, Canadian margarine production recovered in 1979 to 128 000 tonnes, while butter output declined to 103 000 tonnes.

Data is no longer published by Statistics Canada on lard and tallow production; therefore, the table on Canadian production of specified fats and oils products no longer includes the production of lard, edible tallow and inedible tallow.

Table 50

CANADIAN PRODUCTION OF SPECIFIED FATS AND OILS PRODUCTS

(Thousands of Tonnes)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Margarine <sup>1/</sup>	119	126	136	111	128
Butter <sup>2/</sup>	131	117	94	132	103
<u>Shortening</u>					
Packaged <sup>3/</sup>	23	90	90	94	99
Bulk <sup>4/</sup>	148	81	81	85	n.a.
<u>Refined Oils</u>					
Salad <sup>5/</sup>	81	95	101	99	61

<sup>1/</sup> Includes retail and commercial packages. Commercial sales (21-450 pound) packages account for about 5% of total output.

<sup>2/</sup> Includes creamery and whey butter.

<sup>3/</sup> Retail packages up to 20 pounds only.

<sup>4/</sup> Covers commercial (21-450 pound) packages, bulk and other than packaged retail sales of manufacturers of shortening and deodorized shortening oil. Includes baking and frying fats and oils.

<sup>5/</sup> Covers packaged sales only.

Table 51

CANADIAN IMPORTS OF LARD AND SHORTENING

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
France	--	--	3	1	9
Germany, West	1	4	3	9	16
Greece	--	15	--	23	11
St. Pierre-Miquelon	--	22	--	--	--
Sweden	50	55	45	33	--
United States	27 814	35 451	31 880	31 241	13 938
Other Countries	--	3	--	10	--
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	27 865	35 559	31 931	31 317	17 437
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	19 675	16 967	18 972	22 128	10 492
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.



Table 52

CANADIAN EXPORTS OF MARGARINE, SHORTENING AND LARD

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Bahamas	1	--	--	--	--
Bahrain	--	17	--	6	6
Bermuda	14	16	15	27	20
Emirates, UA	--	48	64	41	72
Germany, West	1	--	2	1	1
Hong Kong	--	--	--	--	11
Jamaica	22	35	4	--	--
Japan	--	--	--	3	--
Jordan	--	18	16	--	43
Kuwait	--	67	46	95	108
Lebanon	--	--	190	203	92
Leeward-Windward Is.	3	--	19	45	88
Libya	--	7	--	--	--
Netherlands-Antilles	--	--	32	40	92
Puerto Rico	--	--	--	72	--
Qatar	--	15	11	12	--
Saudi Arabia	--	405	64	665	280
St. Pierre-Miquelon	42	25	41	37	34
Trinidad-Tobago	<u>1/</u>	--	1	--	18
United Kingdom	--	--	--	--	2
United States	182	49	122	311	88
TOTAL	268	706	634	1 559	955
TOTAL VALUE (\$'000)	248	543	770	1 914	1 316

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 53

CANADIAN IMPORTS OF VEGETABLE COOKING FATS

AND PACKAGED SALAD OILS

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
France	12	--	1	1	3
Greece	15	--	12	18	--
Sweden	14	5	1	4	5
United Kingdom	57	3	4	10	5
United States	594	135	404	127	10
	-----	-----	-----	-----	-----
TOTAL	692	144	423	163	23
	-----	-----	-----	-----	-----
TOTAL VALUE (\$'000)	389	109	342	213	26
	-----	-----	-----	-----	-----

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 54

CANADIAN IMPORTS OF TALLOW, ANIMAL OILS, GREASES AND FATS (NES)

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Australia	11	5	--	12	1 181
Germany, West	44	47	41	51	1
United Kingdom	5	17	--	11	5
United States	6 563	2 654	2 900	7 418	4 924
Other Countries	--	11	7	14	--
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	6 734	2 889	2 948	7 506	6 111
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	1 757	1 292	1 521	2 138	3 463
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 55

CANADIAN EXPORTS OF TALLOW, ANIMAL OILS AND FATS (NES)

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Barbados	27	21	--	--	--
Belgium-Luxembourg	996	2 022	798	2 203	988
Brazil	--	--	--	6	18
Chile	--	--	249	--	280
Colombia	52	32	22	28	--
Cuba	13 587	10 702	5 600	3 026	3 001
Dominican Republic	--	--	--	--	320
France	5	10	2 362	3 682	3 524
Germany, West	300	3 857	2 112	898	5 071
Guatemala	21	--	517	17	22
Iran	--	1 300	--	1 079	--
Ireland	300	--	--	--	220
Italy	548	1 413	--	--	--
Ivory Coast	--	--	496	1 178	--
Jamaica	299	474	338	--	--
Japan	10 400	18 058	25 111	23 719	28 176
Kenya	--	50	110	1 550	200
Korea, South	15 700	13 190	26 269	22 996	25 801
Leeward-Windward Is.	--	4	1	--	20
Malaysia	73	56	146	118	72
Mexico	25	20	44	11	--
Morocco	574	--	--	600	325
Netherlands	16 697	29 077	38 105	47 483	54 991
Nigeria	924	1 319	--	--	--
People's Republic of China	5 589	2 033	8 630	4 065	4 065
Portugal	52	157	145	211	210
Senegal	708	--	--	--	--
Singapore	158	18	51	18	46
Spain	9 656	7 390	9 343	6 997	2 018
Switzerland	209	272	169	236	232
Taiwan	--	1 680	2 900	1 950	600

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Trinidad-Tobago	294	503	486	504	1 364
United Kingdom	5 541	9 778	18 064	25 234	13 598
United States	11 044	9 651	4 456	4 889	8 374
U.S.S.R.	3 774	--	--	--	--
Venezuela	69	66	1 132	208	228
Zaire	747	--	--	200	--
Other Countries	956	5	104	5	1 018
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	99 335	113 166	140 829	140 115	154 578
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	32 218	38 589	54 856	68 256	97 500
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 56

PRODUCTION OF SPECIFIED DAIRY PRODUCTS

	<u>1978</u>	<u>1979</u>
Creamery Butter (tonnes)	102 539	98 916
Cheddar Cheese (tonnes)	80 535	94 785
Variety Cheese (tonnes)	59 299	63 367
Process Cheese (tonnes)	67 992	69 381
Evaporated Whole Milk (kilolitres)	132 527	136 401
Condensed Whole Milk (kilolitres)	8 815	9 065
Skim Milk Powder (tonnes)	130 368	114 993
Partly Skimmed Evaporated Milk (kilolitres)	346	5 389

SOURCE: Statistics Canada, Dairy Review 23-001

## CHAPTER 11

### FISH AND MARINE OILS AND MEALS

#### Canadian Trade of Fish and Marine Oils

Exports of these oils increased in volume terms in 1979, although the value decreased slightly to \$4.4 million. Imports of these oils in 1979 fell to less than one-half of the 1978 volume.

#### Canadian Trade of Fish Meal

Exports of fish meal and condensed solubles decreased in 1979 to 26 138 tonnes, valued at \$12.5 million. Imports were insignificant at 308 tonnes, valued at \$111,000.

#### Canadian Production of Fish Oils and Meal

The statistical tables to show the Canadian production of fish oils and meal were of necessity not included in this publication. The reason for their deletion is the fact that Pacific Coast production data cannot be released because in some product areas less than three companies are involved.



Table 57

CANADIAN IMPORTS OF FISH, MARINE AND ANIMAL OILS (NES)

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Japan	--	9	9	10	--
Netherlands	--	6	--	16	--
Norway	629	150	3	155	135
United Kingdom	49	28	5	182	66
United States	199	99	393	288	107
Other Countries	1	4	--	3	--
	-----	-----	-----	-----	-----
TOTAL	878	299	410	654	308
	-----	-----	-----	-----	-----
TOTAL VALUE (\$'000)	500	233	263	699	381
	-----	-----	-----	-----	-----

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 58

CANADIAN EXPORTS OF MARINE OILS BY TYPES

(Tonnes)

<u>TYPE</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Cod Liver Oil, Sun Rotted	868	1 381	915	1 546	1 162
Herring Oil	2 277	5 315	4 124	3 679	6 274
Whale Oil	--	5	14	11	--
Fish and Marine Animal Oil NES	1 746	3 408	10 987	4 161	4 004
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	4 891	10 110	16 040	9 397	11 440
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	1 837	2 968	3 950	4 633	4 407
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 59

CANADIAN IMPORTS OF FISH MEAL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Cuba	--	163	--	--	--
France	59	--	--	--	12
Germany, West	--	229	--	--	--
Japan	2	--	--	--	--
Puerto Rico	41	40	--	--	--
Taiwan	--	--	13	--	--
United Kingdom	--	7	--	2	21
United States	209	521	451	340	275
	-----	-----	-----	-----	-----
TOTAL	311	962	464	342	308
	-----	-----	-----	-----	-----
TOTAL VALUE (\$'000)	87	309	153	91	111
	-----	-----	-----	-----	-----

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 60

CANADIAN EXPORTS OF FISH MEAL AND CONDENSED SOLUBLES

(Tonnes)

<u>TYPE</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Herring Meal and Pilchard Meal	14 733	14 972	11 181	11 484	7 054
Fish Meal NES	9 515	17 000	16 445	23 546	19 084
Fish Condensed Homogenized Solubles	43	941	307	517	--
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL (Meal Only)	24 291	32 913	27 933	35 547	26 138
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (Meal Only) (\$'000)	6 071	9 422	11 367	16 520	12 461
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-004.

## CHAPTER 12

### OTHER INEDIBLE FATS AND OILS

The products grouped in this chapter are castor, tung and tall oils, tall oil pitch, tall oil fatty acids, chemically modified oils, fats and waxes, and mixtures and derivatives of oils, fats and waxes.

Imports of castor oil increased slightly in 1979 to 1 721 tonnes. Tung oil imports fell slightly in volume terms, and by a large amount in value terms. Imports of tall oil, tall oil pitch and tall oil fatty acids increased marginally in volume terms.

Imports of chemically modified oils, fats and waxes dropped sharply to 3 791 tonnes versus 7 865 tonnes in 1978.

Imports of mixtures and derivatives of oils, fats and waxes increased in 1979 compared to the previous year.

Canadian exports of chemically modified oils, fats and waxes declined by about 25 per cent in volume terms, although the dollar value increased in 1979 over 1978.

Table 61

CANADIAN IMPORTS OF CASTOR OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Brazil	1 697	968	257	843	970
Ecuador	--	--	29	250	--
United States	211	345	1 025	591	751
TOTAL	1 908	1 313	1 311	1 684	1 721
TOTAL VALUE (\$'000)	1 169	822	1 343	1 719	1 729

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 62

CANADIAN IMPORTS OF CHINAWOOD OIL OR TUNG OIL

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Argentina	141	70	29	160	115
Paraguay	56	381	223	85	14
People's Republic of China	70	20	--	--	--
United States	423	247	433	380	448
Other Countries	--	16	14	55	63
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	690	734	699	680	640
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	441	663	1 371	1 662	982
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.



Table 63

CANADIAN IMPORTS OF TALL OIL, TALL OIL PITCH

AND TALL OIL FATTY ACIDS

(Tonnes)

<u>TALL OIL AND TALL OIL PITCH</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
United States	2 378	2 849	757	1 167	1 394
<u>TALL OIL FATTY ACIDS</u>					
United States	5 503	4 806	5 159	4 577	4 753
Other Countries	2	15	--	--	--
TOTAL	7 883	7 670	5 916	5 744	6 147
TOTAL VALUE (\$'000)	3 447	2 906	3 252	3 322	3 306

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 64

CANADIAN EXPORTS OF CHEMICALLY MODIFIED OILS,

FATS AND WAXES

(Tonnes)

<u>DESTINATION</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Australia	--	--	--	91	61
Bahamas	--	--	--	--	2
Barbados	27	--	--	--	3
Bermuda	--	--	--	1	1
Chile	--	--	--	--	5
France	14	--	--	--	--
Germany, West	<u>1/</u>	2	--	--	--
Guyana	<u>1/</u>	--	--	--	--
Israel	4	--	--	--	--
Japan	20	--	--	--	--
Leeward-Windward Is.	--	--	<u>1/</u>	--	2
Netherlands-Antilles	--	--	--	1	--
United Kingdom	18	--	150	--	2
United States	3 212	3 008	3 100	4 004	2 877
U.S.S.R.	--	--	508	--	--
Venezuela	9	1	86	48	1
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	3 306	3 012	3 846	4 191	2 954
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	578	663	2 803	1 249	1 265
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 65

CANADIAN IMPORTS OF MIXTURES AND DERIVATIVES

OF OILS, FATS AND WAXES

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Brazil	20	--	--	45	43
Germany, West	98	116	116	43	76
Netherlands	--	--	--	28	6
Norway	--	118	237	257	180
United Kingdom	153	316	604	3	948
United States	10 886	12 031	10 555	9 833	13 598
Other Countries	6	1	2	2	2
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	11 163	12 585	11 516	11 271	14 853
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL VALUE (\$'000)	8 415	9 195	10 969	13 746	19 589
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 66

CANADIAN IMPORTS OF CHEMICALLY MODIFIED OILS,

FATS AND WAXES

(Tonnes)

<u>COUNTRY OF ORIGIN</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Brazil	69	--	40	40	260
France	--	--	--	1	2
Germany, West	8	72	69	79	65
Netherlands	442	214	116	281	270
United Kingdom	1 125	1 219	53	99	10
United States	4 176	4 606	5 848	7 363	3 184
Other Countries	30	1	3	1	--
	-----	-----	-----	-----	-----
TOTAL	5 850	6 112	6 132	7 865	3 791
	-----	-----	-----	-----	-----
TOTAL VALUE (\$000)	6 925	6 084	5 405	8 581	4 810
	-----	-----	-----	-----	-----

SOURCE: Statistics Canada, Catalogue No. 65-007.





















AUG 13 1986



